JANUARY 15, 1953

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ENGINEERING NEWS-RECORD

SEVENTY-NINTH YEAR OF PUBLICATION

Factory-made prestressed bridges, a Pennsylvania innovation that is spreading to other states (See page 35)

★ INDUSTRIES EXPAND ON GULF COAST

★ REGIONAL SEWER SPELLS VARIETY

A McGRAW-HILL PUBLICATION

Short on Erection Time –
Long on Service Life –

BYERS WROUGHT IRON PLATES

Minimum interference with production routine —during installation—and in years to come—is the story behind the selection of genuine wrought iron plate for this smokestack.

The Farrington Manufacturing Company, Boston, needed a stack for their No. 2 Plant *in a hurry*—made of a material that would *slow-down* the corrosive effect of flue gases created by the plant's incinerator and oil-fired heating boiler.

Company engineers found the answer to both problems in genuine wrought iron plate.

The stack, 100 feet high by four feet in diameter, was prefabricated in three sections at the C-W Boiler Company Shop, Holliston, Mass. These sections were trucked to the plant site, welded together, and erected in one day.

Proved corrosion resistance to flue gases and ease of fabrication and welding are outstanding characteristics of Byers Wrought Iron plate. This double advantage has recommended the material for stack use in installations across the nation, and the resulting service records provide convincing evidence of its superior durability.

How the unique character of Byers Wrought Iron plate has made it a veteran in stack service is explained in our bulletin, WROUGHT IRON FOR FLUE GAS CONDUCTORS AND COAL HANDLING EQUIPMENT. Write for your copy. It may help you in combating flue gas corrosion in your operation.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco. Export Division: New York, New York.

BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

WROUGHT IRON

TUBULAR AND HOT ROLLED PRODUCTS

ELECTRIC FURNACE QUALITY ALLOY AND STAINLESS STEEL PRODUCTS

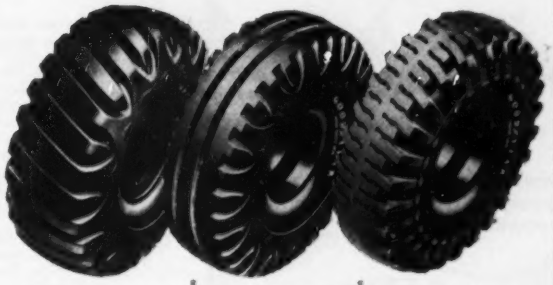
Put it on the tough jobs-

THE HARD ROCK LUG CAN TAKE IT!

FOR rough, tough, off-the-road hauls, you want tires that will keep your trucks moving on schedule with full pay loads—safely, surely, month after month. For such service the Goodyear Hard Rock Lug has no equal.

That's because the Hard Rock Lug is a product of Goodyear's unrivaled experience in building 575 million tires—far more tires for more different specialized uses than any other manufacturer. Look at its features and you'll see why it's the favorite of cost-wise operators. Goodyear, Truck Tire Department, Akron 16, Ohio.

"America Needs Better, Safer Roads—Let's Bring Them Up To PAR."



HARD ROCK LUG
Super-tough champ in all types of tire-killing work. Sidewalls armored by massive lug bars, extra-thick undertread protects extra-thick body. Self-cleaning tread delivers top traction, forward or reverse.

HARD ROCK RIB
Companion tire for front wheels on all tire-killing service. Easier steering, smoother rolling. Same cord body, same shoulder and sidewall as HARD ROCK LUG.

ROAD LUG
High-stamina, dual-purpose tire, best for trucks that operate both ON and OFF the road. Tough construction and special tread design provide super traction off the road—long, smooth mileage on the road.

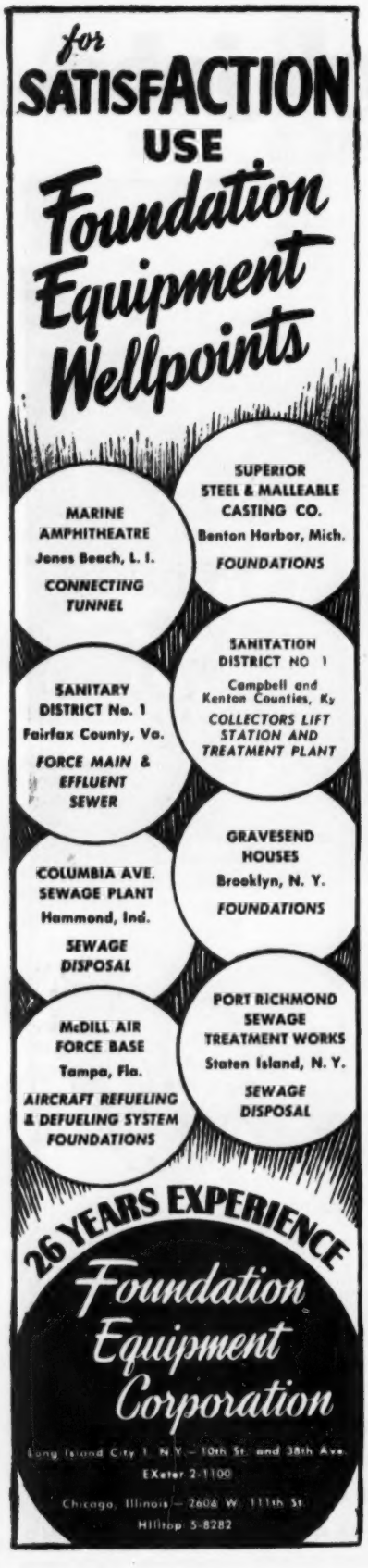
FOR EACH JOB, THERE'S A COST-CUTTING GOODYEAR TIRE!

Road Lug—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

GOODYEAR

MORE TONS ARE HAULED ON GOODYEAR TRUCK TIRES THAN ON ANY OTHER KIND

We think you'll like "THE GREATEST STORY EVER TOLD" — every Sunday — ABC Radio Network — THE GOODYEAR TELEVISION PLAYHOUSE — every other Sunday — NBC TV Network



ENGINEERING NEWS-RECORD

ABP Member ABC

Volume 150 January 15, 1953 No. 3

WALDO G. BOWMAN
Editor

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ROBERT F. BOGER
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NORTHWESTS
for S. A. HEALY CO.
U. S. A.

LOOK AT THIS PICTURE!

—another Northwest Shovel in rock. Not only is it rock—It's *hard* rock! Basalt Rock—amongst the hardest. This is one of the several Northwests owned by the S. A. Healy Company working on the Dalles Dam in the Pacific Northwest.

The S. A. Healy Company is an old Northwest user and rock has been their business for many years. They have used Northwests on jobs that were amongst the best as potential shovel busters. Their jobs have covered the Country from New York to Washington and Northwest repeat orders, year after year, are an unquestionable endorsement of Northwest performance. The shovel in the photograph is their 14th piece of Northwest equipment.

Northwests are *real* Rock Shovels and if you have a *real* Rock Shovel you can be sure of bigger output in any digging. Equip yourself for the toughest job you'll have to do and you will be prepared for anything. Repeat orders by such responsible outfits as S. A. Healy Company are the best possible guarantee of the service you are looking for.

NORTHWEST ENGINEERING COMPANY
1502 Field Building
135 South LaSalle Street
Chicago 3, Illinois

NORTHWEST

SHOVELS • CRANES • DRAGLINES • PULLSHOVELS

How to Reclaim Valuable Surface Material on Abandoned or Worn-Out Roads

You don't have to abandon thousands of tons of useful, valuable aggregate (and binder) when relocating roads. You don't have to face the time and expense of ripping up, loading and hauling away the material.

With HYSTER GRID ROLLER you can now salvage and use the old bituminous pavement—saves both time and money. Here is the procedure when old road is to be abandoned:

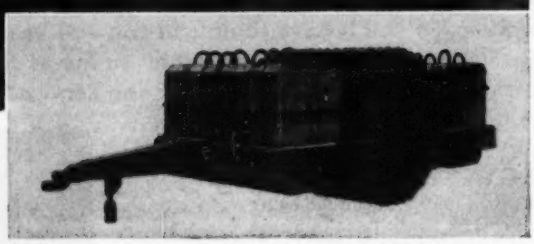
1. Scarify old surface, using motor grader or ripper.
2. Grid Roll chunks without removing from roadbed. An average of 10 passes at 5 miles per hour reduces chunks to the original, loose aggregate mixture.
3. Windrow the salvaged material and load it out with scrapers, conveyor-type loaders, or other conventional equipment.
4. Re-lay salvaged material on properly prepared new roadbed (or stockpile, if desired).
5. Add small amount of binder to salvaged material (amount required varies with condition of binder remaining in salvaged aggregate).
6. Roll new surface (composed of salvaged material) using Hyster Grid Roller.
7. Apply seal coat, if desired.

When maintaining or rebuilding worn-out roads, the procedure is the same except for point No. 3; instead, salvaged material is windrowed on shoulder and the Grid Roller is used to compact and prepare sub-base.

Ask your Caterpillar-Hyster dealer for information about the new Hyster Grid Roller, or write for catalog.

2,500 YARDS OF AGGREGATE SALVAGED ON CALIFORNIA ROAD JOB

Pictured are scenes taken on a recent road re-location job in California. Over 2,500 yards of aggregate were salvaged from the abandoned road, using the Hyster Grid Roller. The procedures outlined were used on this job. After the Grid Roller had salvaged the material, it was loaded out and removed from the old road bed, with Caterpillar DW-10 Tractors and Scrapers, stockpiled (while fill material from the old road was used to provide fill material for new road), then re-layed to form new surface.



HYSTER COMPANY

2953 N. E. CLACKAMAS STREET.....PORTLAND 8, OREGON
1853 NORTH ADAMS STREET.....PEORIA 1, ILLINOIS

B.F.Goodrich

Tires roll over razor-sharp rock —defy cuts and bruises

LEAD and zinc come from rock that shatters into countless sharp, jagged splinters. Trucks hauling these metallic elements roll over roads filled with this abrasive, razor-edged rock — rock that slashes and chews tires to shreds in a matter of weeks.

Not so with the tires pictured above. They are B. F. Goodrich tires, designed to carry giant loads in just such operations. The Universal tread is compounded to resist rock bruises and cuts. Husky, wedge-shaped lugs give positive two-way traction, protect against side slippage even on soft ground.

Like all B. F. Goodrich off-the-road tires of 8 or more plies, Universal tires are built with the exclusive nylon shock shield. Layers of rubber-coated nylon cords under the tread rubber stretch together under impact, protect the tire body from the smashing shocks of off-the-road work.

This shock shield gives you the added savings of greater tire mileage, increased bruise resistance, more recappable tires and less danger of tread separation. All these advantages, yet the nylon shock shield costs nothing extra. In sizes 12.00 and larger, Universal tires have *double* nylon shock shield — twice the protection for even the roughest work. No wonder operators across the country report more hours of service with B. F. Goodrich tires.

B. F. Goodrich builds on or off-the-road tires to meet all your needs. See your local dealer — he'll be glad to show you how to save money and get longer tire life — or write direct to: *The B. F. Goodrich Co., Akron, Ohio.*

RESEARCH KEEPS
B.F.Goodrich
FIRST IN RUBBER

Clearing the Way for a brand new city of 75,000

Bill Jarvis, right, discusses day's activities with Aubrey Warren, one of his superintendents.

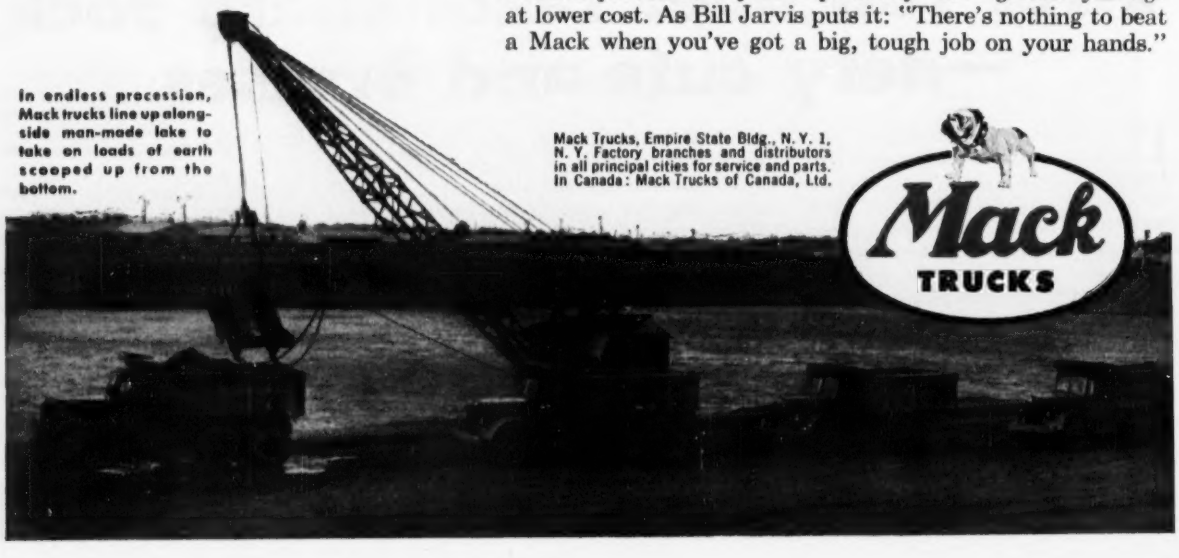
Hub deep mud holds no terrors for Mack's six-wheel Balanced Bogie.

A completely integrated city being built from scratch . . . right from the ground up—that's Levittown, Pa., whose 16,000 homes will house a population of 75,000, making it the tenth largest city in Pennsylvania. Here will live the families of workers who will man the huge, half-billion dollar Fairless Works of the U. S. Steel Corporation.

Clearing the way for the new city now springing up is a fleet of 52 Mack trucks operated by William A. Jarvis, to whom is entrusted the tremendous task of seeing that the earth is graded, drainage canals built, and sewer, drainage and water pipe ditches dug.

Working under floodlights at night, Bill Jarvis' Macks keep to a round-the-clock schedule, 24 hours a day, seven days a week. It is estimated that when the big job is completed, the Jarvis fleet of Macks will have dug out and hauled away a total of 2½-million cubic yards of fill, much of which will be used as aggregate in the making of concrete for the foundations of thousands of new homes.

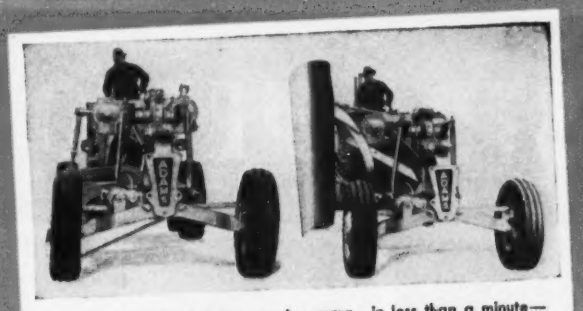
Here again, as on so many of America's biggest and toughest earth-moving projects, Mack trucks get first call because of their proved ability to dependably move greater yardage at lower cost. As Bill Jarvis puts it: "There's nothing to beat a Mack when you've got a big, tough job on your hands."



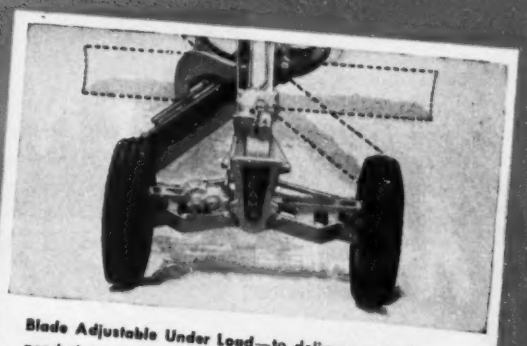
In endless procession, Mack trucks line up alongside man-made lake to take on loads of earth scooped up from the bottom.

Mack Trucks, Empire State Bldg., N. Y. 1, N. Y. Factory branches and distributors in all principal cities for service and parts. In Canada: Mack Trucks of Canada, Ltd.

Mack TRUCKS

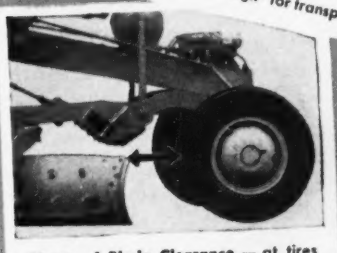


Ditch Cuts to Bank Cuts—or vice versa—in less than a minute—without mechanical adjustments. Saves time on alternate cuts.



Blade Adjustable Under Load—to deliver material where needed on grade balancing work while grader is in motion.

8 Forward Speeds—2 more speeds than most graders—an extra working speed and a higher "high" for transport.



Plenty of Blade Clearance — at tires and all other points. Operator gets all blade positions quickly, easily.

Big, Comfortable Cab—plenty of headroom for a tall man to stand and to see all his work—2-way adjustable seat.

Only ADAMS

Gives you all of these big operating advantages

Yes, in Adams Motor Graders you get all of these important advantages—and many more . . . advantages that help your operator to do high-speed, precision work—at lowest cost.

Adams Motor Graders are powerful and husky, too—built with big reserves of strength and stamina for long-life dependability and low-cost maintenance.

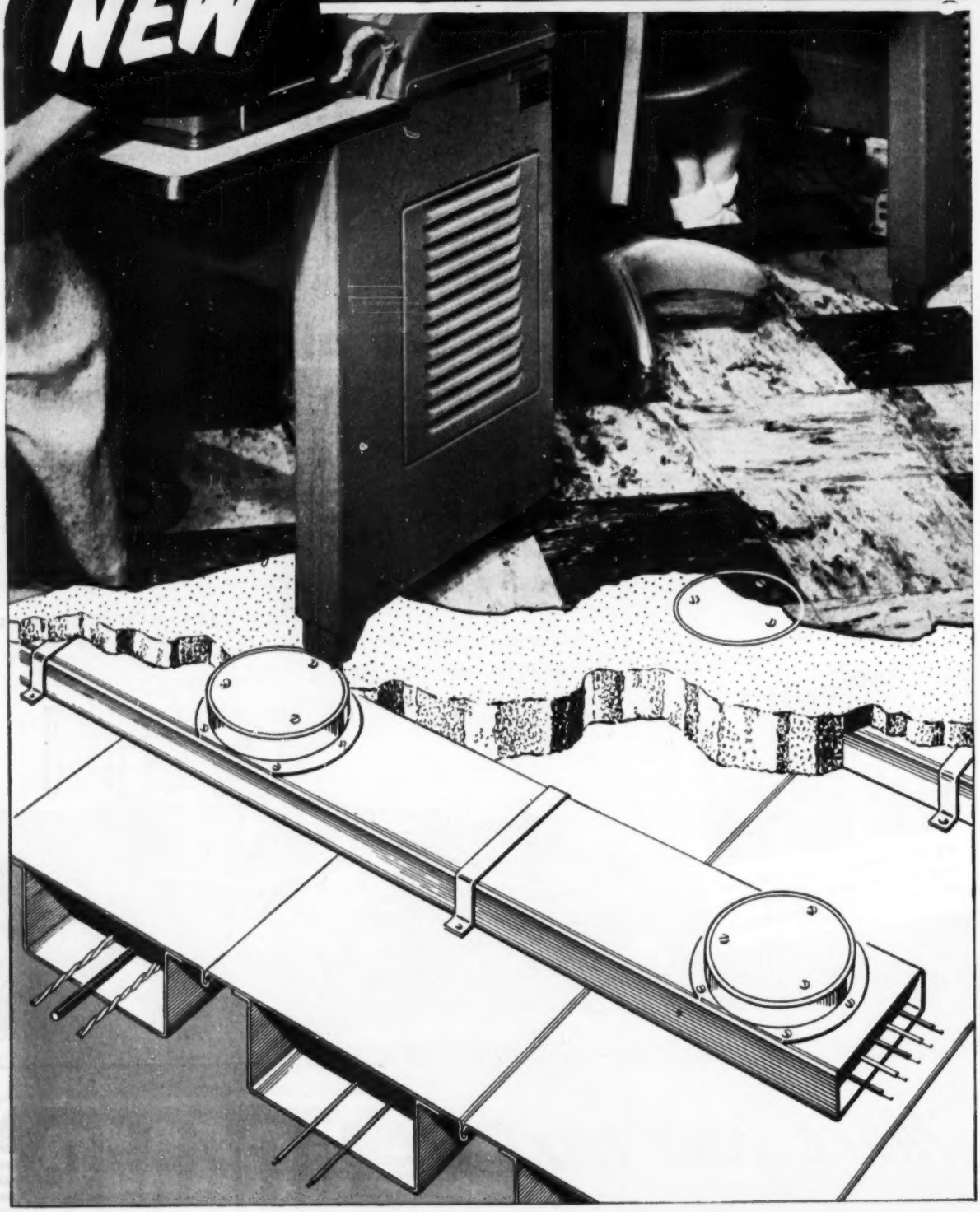
Let your local dealer show you how Adams Motor Graders pay extra dividends the whole year around.

J. D. ADAMS MANUFACTURING CO.
Indianapolis, Indiana

Make your next motor grader an

ADAMS

NEW FENESTRA-NEPCO



ELECTRIFLOOR !

Two great names combine to produce a great new product

Carries live and dead loads at lower cost!

Provides electrical outlets in any square foot of floor area . . . any time!

Fenestra*—a leading manufacturer of metal building panels, and Nepco (National Electric Products Co.)—a leading manufacturer of electrical wiring equipment, pooled their experience and their products to give you a great new building facility . . . Fenestra-Nepco Electrifloor.

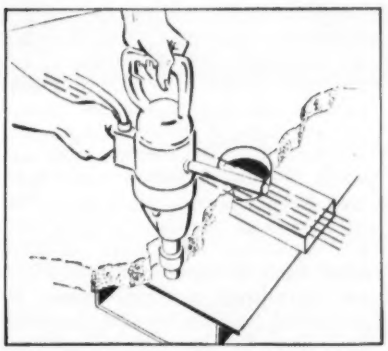
You slash the cost of your foundation and your structural steel. Because this floor is formed by long-span steel, cellular panels coupling great strength with light weight . . . engineered to carry your physical load at the lowest possible cost.

Your building rises fast from its foundation, because your floors go in as your structural steel frame goes up, forming a working platform for other trades.

Your finished building will never be electrically obsolete, for the cells of this cellular steel subfloor act as raceways for wires fed in from the header ducts on the surface of the subfloor.

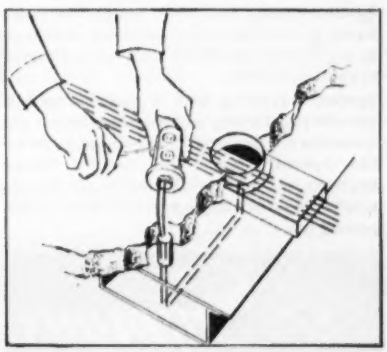
Your client can have electrical outlets in any square foot of floor . . . any time . . . for the life of the building. He can change them as his electrical needs change . . . quickly, inexpensively . . . without disrupting his business. He can move partitions . . . change his whole office layout without costly electrical alterations.

Electrifloor has been fully tested and approved by Underwriters' Laboratories, Inc. Please write for complete details. Have the facts at your finger tips for the job on your boards right now. Let us send you the facts on the City-County Building in Detroit, an Electrifloor installation. Write Detroit Steel Products Company, Dept. ER-1, 2286 East Grand Blvd., Detroit 11, Michigan. *Trademark



◀ A hole is simply drilled down through the finished floor into the cellular subfloor. Floor outlet tubing is installed. Cover is removed from handhole of crossover duct and wires fed down and wires fed through raceway to the drilled hole.

Wires are pulled up through drilled hole and outlet installed. Floor is never torn up, business goes on as usual. You have electrical availability in any square foot of floor . . . any time. As many as 15 outlets in the area occupied by a single desk. ▶

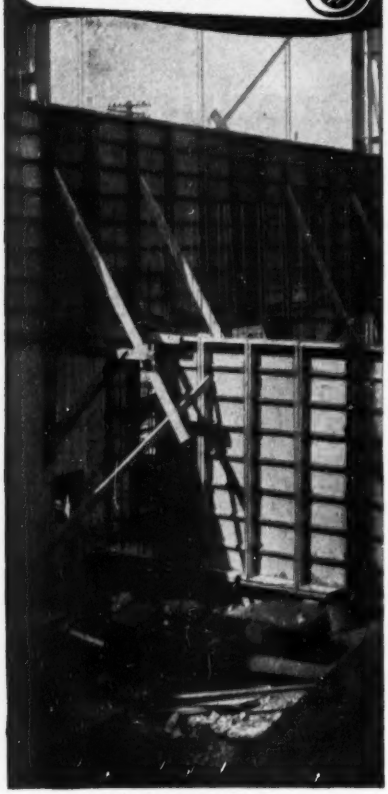


Fenestra Nepco ELECTRIFLOORS

SYMONS

please send form layouts and job cost sheets on our form work

SYMONS CLAMP & MFG. CO.
CHICAGO 39, ILL.



Fink Forged Products Co., Chicago
E. L. Hallbauer, G. C

Symons Forming System—a rapid, cost saving means of concrete wall construction; adaptable to any class of construction from heavy industrial to small residential.

Symons' Engineering Staff is available to help you with your Forming problems. Form layouts and quotations are furnished without charge or obligation. Symons salesmen are qualified forming engineers and are available for on the job consultation regarding any problem of form erection, pouring and stripping.

Symons

SYMONS CLAMP & MFG. CO. Dept. A-3
4265 DIVERSEY AVE., CHICAGO 39, ILL.

Please send information on Symons Forms (enclosed are plans for form layouts and job cost sheets).

Name_____

Address_____

City_____ **Zone**____ **State**____

READER COMMENT

Cold-worked bars in beams

Sir: I have just read the article, "Designer-contractor firms advance prestressed concrete abroad," in ENR Dec. 11, 1952, p. 52, and am especially interested in the third paragraph, "High stress in reinforcing bars," as used in Sweden.

If you will recall, we also have carried out some experimental work of this nature (ENR Aug. 23, 1945, p. 244) that may bear repeating now.

Beams were tested by the late Prof. B. J. Lambert and myself in 1945 to compare the relative strengths of beams reinforced with ordinary bars and with the same bars prestretched 10% cold before placement in the forms. One set of beams with prestretched reinforcement showed no permanent set even after the reinforcement had been stressed to about 100,000 psi in a simple bending test. These beams had no shear reinforcement; yet there were no objectionable cracks on the surface of the beams even under this very severe loading.

At the 1946 convention of the American Concrete Institute, it was shown that stretching reinforcing bars through the plastic range before embedment increased the elastic and ultimate strength of beams, but for some reason the full paper reporting on these tests was never accepted for publication at that time.

Since the stretching processes would all be done either in the shop or at the mills, this process does not require any change from ordinary concrete construction in the field. It will be found to produce much cheaper structures than any of the proposed methods of prestressed concrete construction.

NED L. ASHTON
Professor of Civil Engineering
University of Iowa
Iowa City, Iowa

First private CVP system

Sir: An article in ENR, Nov. 6, 1952, p. 28, stated that the Shafter-Wasco Irrigation District was the first district to decide to build its own distribution system to deliver water from the Friant-Kern Canal of the Central Valley Project.

We wish to call to your attention the fact that the Orange Cove Irrigation District was the first on the Friant-Kern Canal to independently plan and construct its own distribution facilities. The first unit was placed in operation in the spring of 1950, and by the spring of 1953 facilities to serve 22,250 acres of the District's 25,270 acres will be completed. Approximately 10 miles of ditches and 80 miles of 36 to 12-in. concrete pipe have been completed at a total cost of approximately $1,235,000.

District personnel have planned, designed, and supervised construction which has been financed by local improvement district methods.

J. F. SORENSEN
Engineer-Manager
Orange Cove Irrigation District
Orange Cove, Calif.

Against partial prestress

Sir: In your issue of Oct. 30, p. 32, you published an article by P. W. Abeles outlining the advantages of partial prestressing. The case for partial prestressing was very well put, and Mr. Abeles is to be complimented on his presentation. However, the article still left me feeling that partial prestressing is a mixed blessing.

Prestressing is a necessary adjunct to high-strength steels and concrete, because without it deflections at working loads would be excessive. By only partly prestressing, we are giving up rigidity at working loads in proportion to the tension in the bottom fibers. For instance, the deflection at working load of a partly prestressed beam in which cracking occurs at 80% of working load may be as much as three times that of the fully prestressed beam. With no prestress, the deflection may be eight to ten times as great. It is, therefore, essential to relate partial prestressing to the deflections that can be tolerated.

Bottom-flange compressive stresses usually are not critical. They may be increased safely beyond our usual conception, provided that this does not result in too great creep losses, uneconomical delay in form removal, etc., and provided that uplift live loads are small. A stress of 2,000 psi in a bottom flange becomes 1,650 to 1,750 psi after losses, and under normal service conditions will never increase above this. An increase of 20 to 25% in lower-flange working stresses is equivalent to lowering the cracking load about the same amount, insofar as its effect on the required section shape is concerned. In the writer's opinion, such an increase, in many cases, is desirable, since the shear resistance of the beam is further benefited. Slightly increased losses must be expected under both procedures,

(*Continued on page 15*)

RAYMOND

HELPS TV SPAN THE COUNTRY

Rose & Rose, Engrs.—254 W. 54th St., New York, N. Y.
Dr. Ralph B. Peck, Consulting Engr.—University of Illinois.

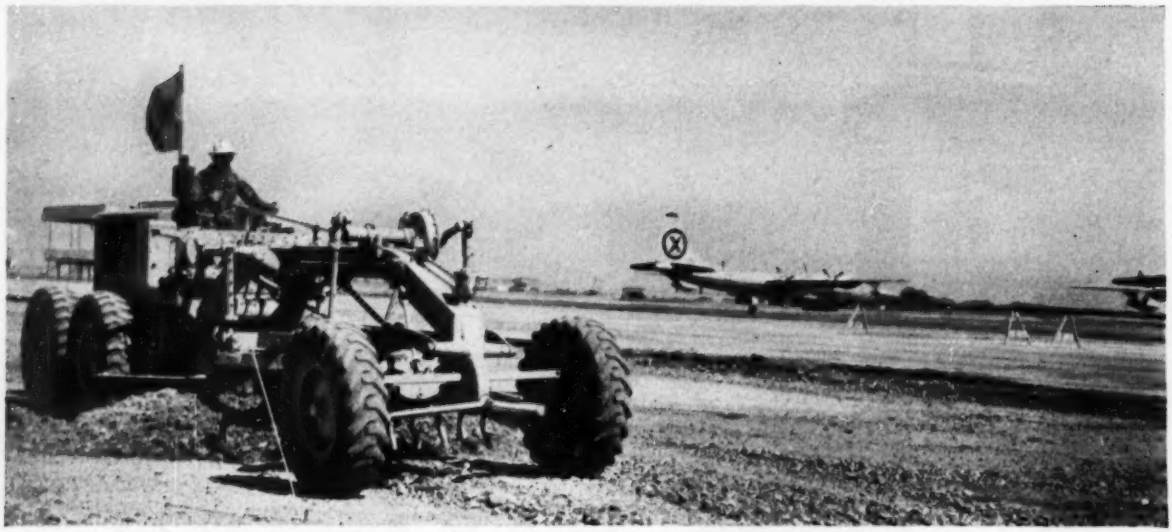
Artist's rendering of the new skyway that spans the nation —the A. T. & T.'s Microwave Radio-Relay Circuit.

Completing another job in record time, the Gow Division of Raymond conducted test borings and made soil investigations for over 150 locations of A. T. & T.'s radio-relay towers which carry television across a major portion of the country. In the accomplishment of this work, Raymond personnel and technique once again played an important part in an outstanding achievement.

Making Gow test borings for one of the towers at an elevation of 8,900 ft. in Wyoming.

RAYMOND
CONCRETE PILE CO.
140 Cedar Street • New York 6, N. Y.
Branch Offices in the Principal Cities of United States and Central and South America

SCOPE OF RAYMOND'S ACTIVITIES . . . Foundation Construction . . . Harbor and Waterfront Improvements . . . Soil Investigations . . . In-Place Pipe Lining . . . Specialized Construction.



There's always a job for a motor grader. This No. 12 maintained haul roads.

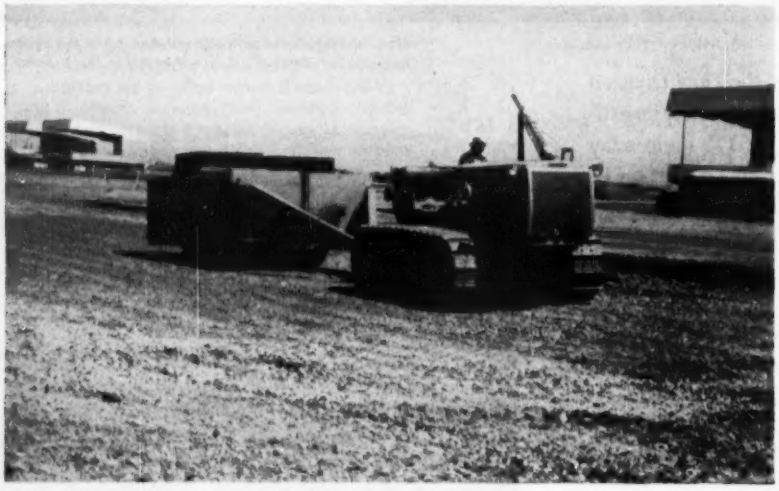
High-speed project at Travis Air Force Base

BIG YELLOW MACHINES USED BY MORRISON-KNUDSEN TO BUILD NESTING AREA FOR GIANT PLANES

Covering a 2,800-acre plain of the Sacramento Valley near Fairfield and Suisun, Calif., Travis Air Force Base handles some of the very largest bombers and transport aircraft. Training missions are flown regularly from there, and a large percentage of Korean casualties are winged from Japan to this base, which has the largest Air Force hospital on the West Coast.

When primary expansion at Travis called for larger plane parking areas, a high-speed contract was awarded to Morrison-Knudsen Company, Inc., Boise, Idaho. Additional construction included water facilities and an underground electrical system.

Plenty of heft—a D8 pulls a 100-ton Porter compactor, bearing down on sub-base fill for new plane parking area.



Every project has its problems, and this was no exception. To handle mammoth aircraft, runways and parking areas at Travis require thick asphalt and concrete surfaces. Sub-base material of deep rock layers increases their strength. However, there was far from an adequate supply of rock near the aprons for the new construction. This necessitated an endless chain of hauling units carrying fill rock from the stockpile to excavations, and returning with excavated earth.

Another problem posed was the fast production of aggregate material for concrete and asphalt surfacing. To solve this, a twin batching plant was erected at the base. Between them, the twin 4-compartment bins had a 320-ton capacity. Four sizes of concrete aggregate and sand, shipped in by rail, were trucked to the plant.

HALF-MILLION CUBIC YARDS JOB

Keeping a huge job moving on the double day after day requires, among other things, the use of tough machines. For this reason, Morrison-

Cat DW10 Tractor with No. 10 Scraper steps right along with excavated material, averaging 5 trips per hour on a 3-mile haul at Travis Air Force Base.

Knudsen concentrated largely on its Caterpillar equipment. And the big yellow Diesel tractors, 'dozers, scrapers and motor graders came through with outstanding performance.

In a well-organized setup, Cat-built units were busy all over the base. DW10 Tractors with No. 10 Scrapers, going 1 foot to 3 feet to 4 feet below the existing pavement, excavated and hauled poor soil and adobe. With built-up sides, the scrapers averaged 11 cubic yards per load. They made 5 trips per hour on a 3-mile round trip, over roads maintained by No. 12 Motor Graders.

Duties assigned husky D8 Tractors with 'Dozers were varied and many. One D8 worked in a borrow pit cleaning up around the shovel that turned out 350 to 400 ten to eighteen cubic yard loads of select material per day. Other D8s fed conveyors in the twin batch plant and stockpiled sand and gravel. Others were used to spread sub-base material and, where needed, to serve as pushers. Still another D8 pulled a 100-ton Porter compactor.

Totaling all earth and rock handled during the excavating and fill placement, M-K's equipment moved more than half a million cubic yards. Said Project Manager R. F. McCune: "Caterpillar-built machines enabled us to maintain our speedy schedule."

STANDARDIZATION PAYS OFF

Many contractors have found that standardization on rugged yellow equipment is good business. Every machine is engineered and built to stay on the job steadily in conditions that slow down ordinary machines. Other advantages include interchangeability of parts for simplified maintenance, increased operator efficiency and on-the-spot service from the nearby Caterpillar Dealer.

All this adds up to big production at rock-bottom costs. For further facts, see your Caterpillar Dealer. His file of performance data on construction jobs all over the country is well worth seeing. He is available at your convenience for information and a demonstration.

Two Caterpillar D17000 Engines power this 44-ton locomotive, used for switching cars at Travis Air Force Base.

Two D8s with No. 8S Bulldozers feed conveyors at twin batch plant for aggregate. D8s were also used to stockpile and spread sub-base fill.

CATERPILLAR TRACTOR CO., PEORIA, ILLINOIS

Now here is TOWERS

WSB-TV TELEVISION AND FM RADIO BROADCASTING STATION ATLANTA, GA.

WE ARE PROUD OF THIS TOWER BECAUSE THOUSANDS OF GALVANIZED ANCO STRUCTURAL RIB BOLTS WERE USED IN THE ERECTION.

THE RIB BOLT WITH NATIONAL COARSE THREADS AND "ANCO" LOCK NUTS — YOU CANNOT STRIP THE THREADS AND THE LOCK NUT REALLY LOCKS.

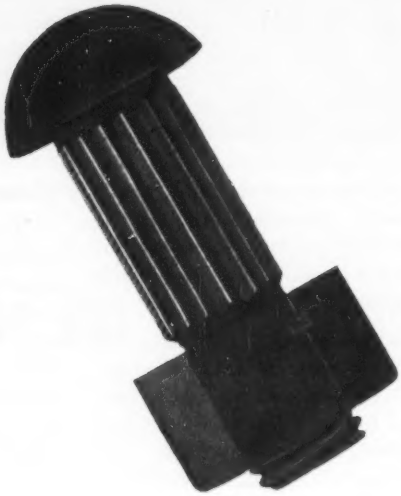
And this is only one of many construction jobs where Structural Rib Bolts with Anco Lock Nuts made the job easier. They are so easy to use that one man with a maul and wrench takes the place of a forge and riveting team, thus are labor saving. The only ribbed bolt on the market with National Coarse threads and the Anco lock nut, thus offers exclusive safety advantages.

Moreover, they have unusual strength—tests show a 5/8" dia. bolt to be stronger than 3/4" dia. rivet. They're approved for Federal, State and Private projects. Furnished black or galvanized. Shear and bearing values equal to hot driven rivets.

Write for complete data.

one of the TALLEST IN THE U.S.

OVERALL HEIGHT 1057 FEET



GALVANIZED Anco Structural Rib Bolts are used in the erection of all types of towers—Radar—Television —Radio–Hi-Tension, Etc.

GALVANIZED "ANCO" lock nuts are used on millions of clamps for Transmission Lines.

ONE OF HUNDREDS OF TOWERS FROM COAST TO COAST ERECTED WITH STRUCTURAL RIB BOLTS & ANCO NUTS

Designed & fabricated by IDECO Division of Dresser-Stacey Co., Columbus, Ohio

Erected by Beasley Construction Company, Muskogee, Okla.

AUTOMATIC NUT COMPANY, INC.

LEBANON - - - PENNSYLVANIA

but this is not serious since they can be taken into account.

Under a truly "balanced" design, maximum desirable working stresses under working load, considering long-term effects, occur at the desired fraction of the ultimate load. It is possible, by using the optimum depth, to design a section for which the steel does not have to be prestressed beyond any rated anchorage capacity. This is not peculiar to partial prestressing alone.

A previous article, "New fatigue machine tests prestressed concrete," (ENR Oct. 9, p. 76) throws doubt on the desirability of allowing bond stresses to fluctuate over any great range. Partial prestressing has the characteristic of increasing such fluctuations under service loads.

I am not clear as to why, with partial prestressing, we can use shallower beams than with full prestressing. Surely, in both cases, shallower depth simply means a sufficient increase of material quantities. And with the greater deflections of partly prestressed beams, decreased depths lose some of their glamour.

A. M. LOUNT
Structural Engineer
Toronto, Ont.

CALENDAR

National Association of Home Builders, Conrad Hilton Hotel, Chicago, Ill., Jan. 18-22.

American Society of Landscape Architects, annual meeting, Ansley Hotel, Atlanta, Ga., Jan. 26-28.

Association of Asphalt Paving Technologists, Rice Hotel, Houston, Tex., Jan. 26-28.

Associated Equipment Distributors, annual convention, Conrad Hilton Hotel, Chicago, Ill., Feb. 1-5.

Mason Contractors Association of America, Sherman Hotel, Chicago, Ill., Feb. 1-4.

California Street and Highway Conference, University of California, Berkeley, Feb. 4-6. California Municipal Refuse Collection and Disposal Conference, University of California, Berkeley, Feb. 5-6.

American Road Builders Assn., Hotel Statler, Boston, Mass., Feb. 9-11.

American Concrete Institute, annual convention, Statler Hotel, Boston, Mass., Feb. 17-19.

Interamerican Municipalities Congress, Montevideo, Uruguay, Feb. 20-28.

Ohio Water Clinic, Ohio State University, Columbus, Feb. 19-20.

Illinois Conference on Highway Engineering, Urbana, Feb. 24-26.

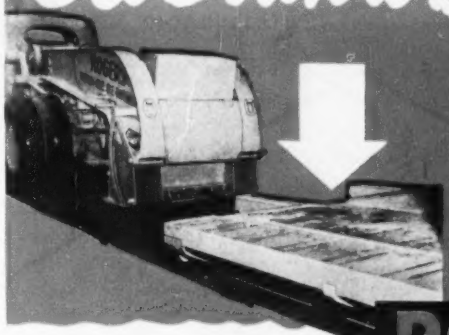
Industry conference on air pollution abatement, Hotel Statler, Detroit, Mich., Feb. 26-27.

American Concrete Pipe Association, annual convention, Baker Hotel, Dallas, Tex., Feb. 26-28.

American Concrete Pressure Pipe Assn., annual convention, Baker Hotel, Dallas, Tex., Feb. 25.

American Concrete Agricultural Pipe Assn., annual convention, Baker Hotel, Dallas, Tex., Feb. 26.

"Get Down to Business"



TO A LOW LOADING DECK HEIGHT OF ONLY 16" WITH THE VERSATILE TYPE "TPG"...

ROGERS POWER LIFT DETACHABLE GOOSENECK TRAILER

PATENTS PENDING

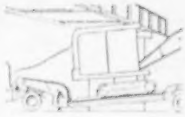
LOW LOADING permits an easier, faster, more profitable operation in hauling equipment to and from the job.

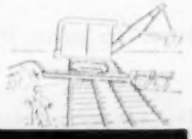
Shovel "walks" up low deck over a minimum of blocking and rampage. *There is no stress or strain applied to the frame or gooseneck.* No blocking required under frame.

For your best buy in a multi-purpose, heavy duty trailer, investigate this versatile unit. It incorporates every desirable "job-proved" feature originated by Rogers.

CAPACITIES: 15, 20, 25, 30, 35, 40, 50, 60 & 75 TONS

DETACHES, LOADS AND ATTACHES IN 5 MINUTES —
LOADS EASILY OVER LOW FRONT OF DECK —
RAISES ITS DECK TO CLEAR HIGH BANKED CROSSINGS —
STOOPS TO CLEAR LOW OVERHEAD OBSTRUCTIONS —
20" & 24" TIRES INSURE GREATER TIRE LIFE, LARGER AND MORE EFFECTIVE BRAKES: AND OFTEN PERMIT INTERCHANGEABILITY WITH TRACTOR TIRES.





THE ROGERS Power Lift DETACHABLE GOOSENECK CAN BE OBTAINED ON ANY STANDARD ROGERS DROP DECK TRAILER

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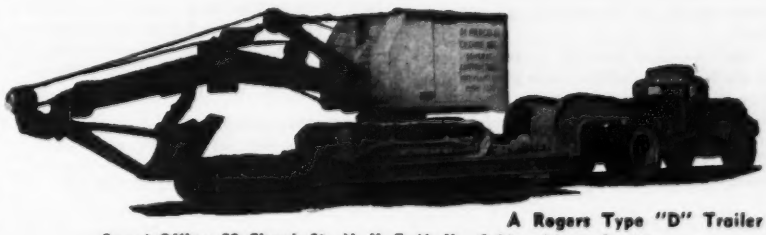
ALBION, PENNA. CABLE: BROSITES



A Rogers Type "D" Trailer

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JENKINS PRACTICAL PIPING LAYOUTS 64

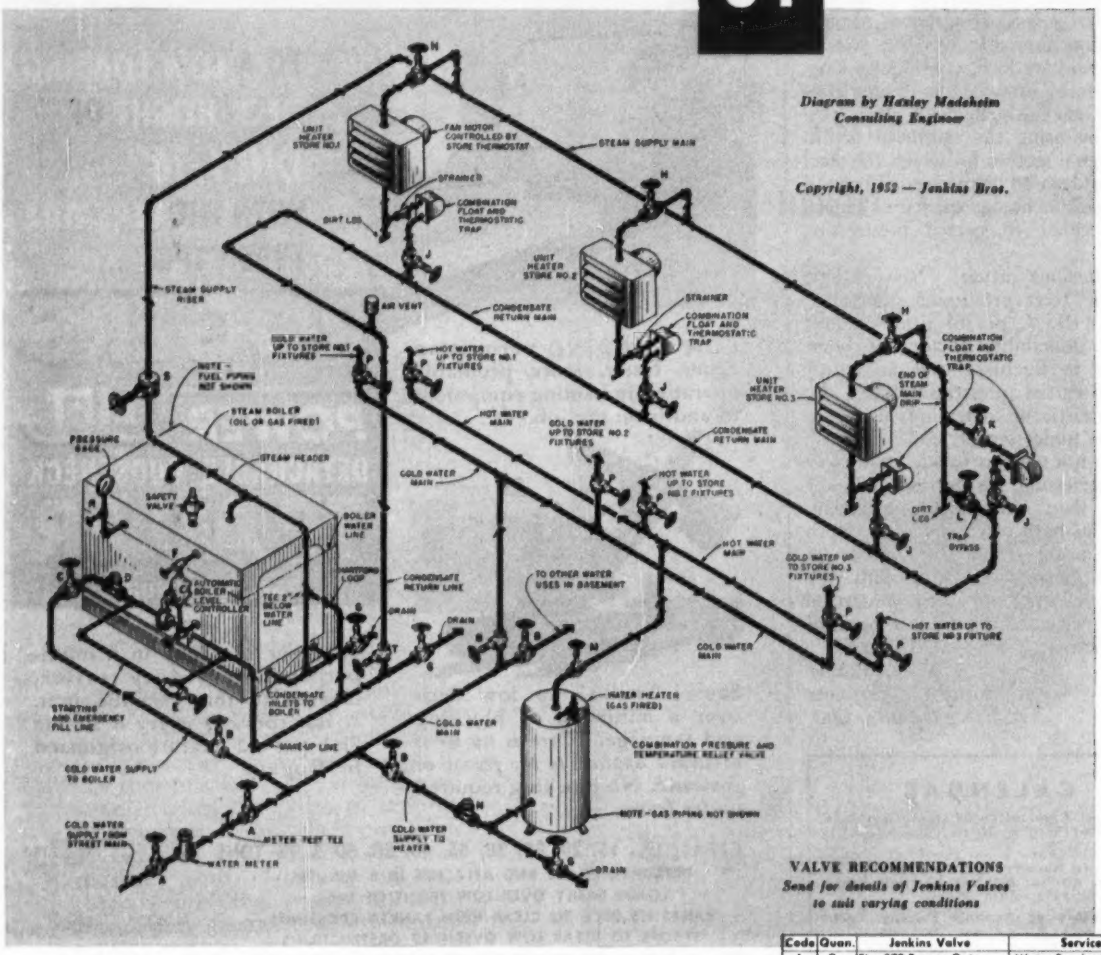


Diagram by Haxley Madeheim
Consulting Engineer
Copyright, 1952 — Jenkins Bros.
UNIT HEATER STORE NO.1
FAN MOTOR CONTROLLED BY STORE THERMOSTAT
STEAM SUPPLY MAIN
STRAINER
COMBINATION FLOAT AND THERMOSTATIC TRAP
DIRT LEG
UNIT HEATER STORE NO.2
STEAM SUPPLY RISER
AIR VENT
CONDENSATE RETURN MAIN
COLD WATER UP TO STORE NO.1 FIXTURES
HOT WATER UP TO STORE NO.1 FIXTURES
NOTE - FUEL PIPING NOT SHOWN
STEAM BOILER (OIL OR GAS FIRED)
PRESSURE GAGE
STEAM HEADER
HOT WATER MAIN
COLD WATER UP TO STORE NO.2 FIXTURES
UNIT HEATER STORE NO.3
END OF STEAM MAIN DRIP
COMBINATION FLOAT AND THERMOSTATIC TRAP
CONDENSATE RETURN MAIN
COLD WATER MAIN
HOT WATER UP TO STORE NO.2 FIXTURES
SAFETY VALVE
DIRT LEG
TRAP BYPASS
BOILER WATER LINE
HOT WATER MAIN
GOOSENECK LOOP
CONDENSATE RETURN LINE
TO OTHER WATER USES IN BASEMENT
COLD WATER UP TO STORE NO.3 FIXTURES
AUTOMATIC BOILER FILL LEVEL CONTROLLER
TEE 5" BELOW WATER LINE
DRAIN
HOT WATER UP TO STORE NO.3 FIXTURE
COLD WATER MAIN
STARTING AND EMERGENCY FILL LINE
CONDENSATE INLETS TO BOILER
WATER HEATER (GAS FIRED)
COLD WATER MAIN
COMBINATION PRESSURE AND TEMPERATURE RELIEF VALVE
MAKE-UP LINE
COLD WATER SUPPLY TO BOILER
NOTE - GAS PIPING NOT SHOWN
COLD WATER SUPPLY FROM STREET MAIN
METER TEST TEE
COLD WATER SUPPLY TO HEATER
WATER METER
DRAIN

VALVE RECOMMENDATIONS
Send for details of Jenkins Valves to suit varying conditions

Code	Quan.	Jenkins Valve	Service
A	2	Fig. 370 Bronze Gate	Water Service Shutoff
B	4	Fig. 370 Bronze Gate	Distribution Shutoff
C	1	Fig. 106-A Bronze Globe	Water Supply to Boiler
D	1	Fig. 92 Bronze Swing Check	Prevent Boiler Backflow
E	1	Fig. 108-A Bronze Angle	Emergency Boiler Fill
F	2	Fig. 108-A Bronze Angle	Level Controller Shutoff
G	3	Fig. 106-A Bronze Globe	Drains Shutoff
H	3	Fig. 106-A Bronze Globe	Steam Supply to Heaters
J	4	Fig. 370 Bronze Gate	Condensate Drain Shutoffs
K	1	Fig. 106-A Bronze Globe	Steam Main Trap Connection
L	1	Fig. 106-A Bronze Globe	Trap Bypass
M	1	Fig. 47-U Bronze Gate	Hot Water Heater Shutoff
N	1	Fig. 92 Bronze Swing Check	Prevent Water Heater Backflow
P	6	Fig. 370 Bronze Gate	Water Supply Shutoffs
R	1	Fig. 743-G Bronze Needle	Pressure Gage Control
S	1	Fig. 651 I.B.B.M. Gate	Steam Main Shutoff
T	1	Fig. 370 Bronze Gate	Return Shutoff

How to plan PLUMBING AND HEATING IN A SMALL TAXPAYER BUILDING

The one-story "taxpayer" building developed with the movement of shopping centers to suburban areas. Constructed with or without a basement, it houses retail stores, service establishments, amusement centers, restaurants and offices.

Heating and plumbing requirements of such a building are usually provided by the owner, whose main interest is economy and trouble-free operation. An oil or gas fired steam boiler with automatic controls, and a separate gas fired heater for hot water supply, as illustrated, is commonly used.

The two-pipe heating system, located in the basement, utilizes unit heaters hung from the ceiling to save space. Individual thermostatic controls assure fuel savings and even heating. A further refinement of the control system would include an automatic shutoff or modulator valve on the steam line just ahead of each heater, and an aquastat in the condensate return line from each heater. Piping is simple in such an installation and standard-type valves are used.

Consultation with accredited piping engineers and contractors is recommended when planning any major piping installation.

To save time, to simplify planning, to get all the advantages of Jenkins specialized valve engineering experience, select all the valves you need from the complete Jenkins line. It's your best assurance of *lowest cost in the long run.* Jenkins Bros., 100 Park Ave., New York 17.

Complete description and enlarged diagram of this layout free on request. Includes additional detailed information. Simply ask for Piping Layout No. 64.

JENKINS VALVES
LOOK FOR THE DIAMOND MARK
SINCE 1864

Plenty of new money in 1953

There will be plenty of new money to finance new construction in 1953. Total demand for borrowed money is expected to be just about equal to what it was last year, and there should be about the same amount available for new loans. With prices also expected to remain fairly level, this adds up to a generally stable outlook for the cost of borrowing money.

Private borrowers will need slightly less borrowed money this year than last. Corporations are planning to spend a bit less on new plants and equipment, and probably will need less money for financing inventory buildups. Demand for home mortgages may also drop a little. Other mortgages are likely to increase as a result of the expected upturn in commercial building.

Public borrowers, on the other hand, will need more money this year. State and local governments are expected to offer larger bond issues. And the federal government will need $1 billion or so more than it did last year.

The big private lenders—banks, insurance companies and the public—are expected to have about as much money to lend as they did in 1952. The supply of loanable funds depends basically on how much people save. Judging by recent habits of U. S. consumers, savings will be about the same this year as last, possibly somewhat larger.

• **Special factors**—But the fact that demand and supply of funds are expected to balance—roughly—as they did last year does not eliminate all big problems for the borrower. Here are some of the points that could prove troublesome in the money situation this year.

1. By this summer or fall business activity could slip. Industrial production is very high at present, and some decline is expected later in the year. Probably it won't be severe, as long as consumers go on buying heavily. But if activity should confound the forecasters and drop substantially, demand for new loans might fall off sharply.

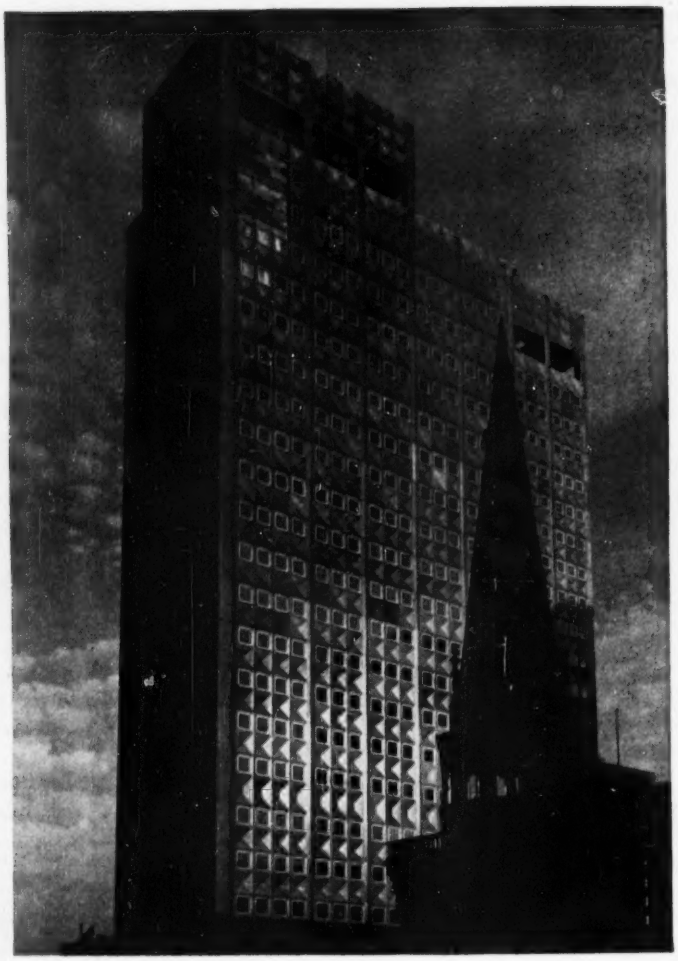
2. Changes in the Korean situation would affect the money markets. Speedup in the war would make borrowing more difficult and more expensive; a truce would have the opposite effect.

3. Federal maneuvering in the government bond market could make new borrowing more expensive. Republicans are expected to take steps to change the heavily short-term federal debt into more manageable, long-term debt. That would involve issuing long-term bonds at a higher rate of interest—perhaps 3%, which would be very high for federal securities. And any basic move toward higher rates for government bonds inevitably would raise interest rates for other borrowers.

There are some good reasons to think that the government will be fairly cautious about changing the debt structure this year—mainly because any change could have such severe repercussions on other borrowers. But the new Treasury officials are believed to want some action on this front as soon as it can be managed conveniently.

4. Special factors will make borrowing somewhat harder for certain purposes. State and municipal tax-free bonds in particular face some special problems. For one thing, the market is being asked to absorb an extraordinary amount of these bonds—estimated at over $4 billion in 1952, and perhaps as much as $5 billion in 1953. Since the market for tax-exempt bonds is somewhat specialized, borrowers lately have had to pay higher interest rates, and rates may go up again in 1953.

The possibility of some tax relief also cuts into the market for tax-exempt bonds. It probably will not be known for months when Congress will cut taxes, and how big the cut will be. Best guess today is that relief will not be great at first, but may be more substantial in 1954. But any prospect of tax cuts is also a threat in that such cuts might lessen the advantage of holding tax-exempt state and municipal bonds at present interest rates. Proposed tax cuts thus may add more pressure on the costs of state and local borrowing.



General Contractor says:

Mr. James Murphy, vice president of engineering, The George A. Fuller Company, New York, says, "Because the flooring goes up as Q-Floor raceways are laid, construction costs can be reduced in large buildings, such as Alcoa's 30-story office building."

Electrical Contractor says:

"When we put in a G-E Q-Floor wiring job, we know electric service will never become obsolete. New wiring can be pulled through the many available cells at any time," says Mr. Harry Fischbach, electrical contractor.

The Alcoa Building, Pittsburgh, Pa.—
new home office for Aluminum Company of America

Architects—Harrison & Abramovitz, New York City
Associate Architects—Altenhof & Bown and Mitchell & Ritchey, Pittsburgh, Pa.
Consulting Engineer—Edward E. Ashley, New York City
General Contractors—The George A. Fuller Company, New York and Pittsburgh
Electrical Contractors—Fischbach & Moore, Inc., New York City

Q-FLOOR WIRING

SIZE UP YOUR PLANS for electrical flexibility

Whether you're planning thirty-story or two-story buildings, you can plan ahead for electrical flexibility with G-E Q-Floor wiring.

With General Electric Q-Floor wiring, your buildings will be prepared, throughout their lifetime, for the electrical demands of changing floor layouts.

With G-E Q-Floor wiring the cellular floor *is* the raceway system. That's why tomorrow's unforeseen demands for additional distribution and new power, signal, or telephone service can be met so quickly. Electrical outlets can be added or re-located within six inches of any spot on the floor area . . . at any time . . . in quick time.

For further information on General Electric's Q-Floor Wiring, write to Section C2-132, Construction Materials Division, General Electric Company, Bridgeport 2, Connecticut.

You can put your confidence in—

GENERAL ELECTRIC

THE CONSTRUCTION WEEK

• **Aluminum door slammed**—Canada has slammed the door conclusively in the face of the Aluminum Company of America's plans for development of hydro power in Alaska—and with it is a $700-million processing plant (ENR Aug. 28, 1952, p. 21).

Piqued by U. S. balking at entering any purchase agreements for Canada's own plant now building at Kemano (ENR Sept. 25, 1952, p. 32), the Canadians cited a 1907 law forbidding diversion of waters for use outside the country.

As of this week, Alcoa executives—who have been negotiating with Canada privately—were reported considering enlisting the aid of the U. S. State Department to get reconsideration of the Canadian decision. Privately, they expressed optimism—but Ottawa observers saw no signs of change.

• **Brazilian ore source prospect brightens**—Although Bethlehem Steel hasn't yet resolved its troubles over management, that huge new Brazilian manganese-ore source was getting closer to practicable operation.

The source is reportedly located 150 mi within the Brazilian jungle from the city of Macapa. To develop it, Bethlehem has planned construction of a town, a railroad line, roads, and processing works. The joker has been—and still is—the Brazilian law which requires that control of such natural resources must be vested in Brazil. Bethlehem has been unhappy because it doesn't control the Brazilian company set up to do the job (ENR Nov. 27, 1952, p. 17).

But, anyway, the U. S. government has committed itself to buy 400,000 tons of the ore, for delivery in 1956 and 1957, and took an option on 30% of the total output (estimated at 5,500,000 tons) at 10% below market price at time of delivery.

• **Unified construction command**—Announcement that Maj. Gen. George J. Nold will be transferred next month from his present job as Deputy Chief of Engineers to a newly created post as head of all U. S. military construction in Europe pinpoints a victory for the Army viewpoint over that of the Air Force. The setting up last year of a group of top-notch contractors (Brown & Root, Raymond Concrete Pile Co., and Walsh Construction Co.) to administer the European air base program under the name of Construction Management & Engineering Associates (CMEA) was the Air Force's idea of how its work should be handled. Under this scheme each of the services would direct its own design and construction, as in fact they have been doing up to now.

But the Army advanced the idea that all construction should be unified, preferably under the Commanding General, Communications Zone, U. S. Army, Europe, a post now held by Maj. Gen. Samuel D. Sturgis, who will soon return to the U. S. as Chief of Engineers. At a recent meeting in Paris attended by top brass in the three services, the Army proposal was adopted, and General Nold selected to head the unified construction command. What place, if any, CMEA will occupy in the new set-up has not been announced although there is substantial sentiment for retaining it as a vital part of General Nold's organization.

• **Future business note**—The Reclamation Bureau's estimate of electric power construction needed in the West is a whopper. Reclamation says that more than $25 billion worth must be started within the next 20 years to meet the 1975 estimated demand. The bureau carefully kept out of the public vs private-power feud, but suggested a giant, 22-state grid connecting big power sources as more economical than building and fueling a series of local plants.

• **Code revision**—Canadian government experts, charged with the task of revising and updating the National Building Code, have reached what they call the "nightmare stage"—but hope to finish their labors soon, anyway.

After a year of review and consultation, a drastic revision is now being polished up. As many as 29 technical committees—more than 200 experts—have been at work on the project.

Tide Water Power Company building, Wilmington, N. C.

Beauty's 7-league boots

Colorful architectural concrete slabs in seven-foot module speeded this job!

Architectural concrete slabs in modular design made short work of a long exterior here. Large, lightweight slabs made with Atlas White Cement were erected in a fraction of the time that smaller units require. Fewer joints minimized time and cost of pointing, flashing, waterproofing. And a rich color contrast was built in . . . permanently!

The modern design is highlighted by cream-colored slabs that stand out smartly against blue steel paneling beneath the windows. Polished base slabs provide a rich contrast in dark red. These are only a few of the virtually limitless color and texture effects possible when you use concrete facing slabs made with Atlas White Cement. Its true and uniform white brings out the full color values of both aggregates and pigments.

Atlas White Cement complies with ASTM and Federal Specifications. For further information, see SWEET'S Catalog, Section 4E/7a and 13C/5, or write Atlas White Bureau, Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N. Y.

STRONG 7′ x 7′ slabs of architectural concrete cover large areas quickly . . . in rich color. They're only 2″ thick, allowing savings in weight and space for the building! Architect: Charles C. Hartmann, General Contractor: C. M. Guest & Sons, precast slabs by Mabie-Bell Co.—all of Greensboro, N. C.

ENR-WCSI-40

FOR BEAUTY AND UTILITY

ATLAS WHITE CEMENT

FOR TERRAZZO, PAINT, SLABS, STUCCO

"THEATRE GUILD ON THE AIR"—*Sponsored by U. S. Steel Subsidiaries Sunday Evenings — NBC Network*

ENGINEERING NEWS-RECORD

'54 construction budget hard to cut

President's $7-billion request for construction items called "hard core" in budget under study—little new work

The big construction funds listed last week in President Truman's $78-billion-plus 1954 budget are practically impregnable in the opinion of most observers. They figure that no administration and no Congress can hope to do much chipping away of the hard-rock core of construction requirements.

Only a thin surface crust of debatable proposals is seen as offering any real chance for congressional whittling. And those proposals don't amount to much in construction money, when measured against the budgeted total of nearly $7 billion in federal construction spending for fiscal 1954 ($4.2 billion for civil construction, $2.6 billion for military).

The Eisenhower budget for 1954 construction probably won't look much different from the spending schedule that Truman projected last week. If Congress finds ways to trim the total by as much as 5%, construction men will miss their guess. There is as great a chance that Congress may increase the construction spending total by a small percentage for the year that starts July 1.

Big as Truman's construction budget is, it doesn't include everything. So far as construction spending goes, the estimates for fiscal '54 are complete. But Truman surprised construction observers by limiting his estimate for new military public works to projects that already have been fixed and finally determined by the Defense Department.

Within a month to six weeks, the Defense Department plans to have ready for Congress a supplemental request for new military construction authorizations and for new money to finance those projects that can be awarded during fiscal 1954 or soon. By legislative direction, the military services operate strictly on a cash basis in awarding contracts. They can start no military public works until they have the money in the bank.

Defense Department supplemental requests may ask authorizations—and possibly appropriations—running up to $2 billion additional for military public works in fiscal 1954. Added to $700 million of new military construction money that Truman included in his budget, the supplemental requests could well run the Defense Department total close to the $3 billion that has been talked about for additional military public works in fiscal '54.

• **Full schedule**—This new military construction money won't affect the rate of spending on military public works construction during fiscal '54. The military services have a full schedule of work for that year out of money already appropriated. As of now, the services have more than $5 billion of construction cash in the till, waiting to be spent. Nearly all of it is committed for contracts already under construction or to be awarded before June 30.

Table II, on page 23, shows how big a slug of federal construction cash the military services will spend during fiscal 1954—nearly $2.6 billion, or 37% of all federal construction spending for that year. Big as that percentage is it's much smaller than the piece that defensive expenditures as a whole take out of the 1954 budget.

Truman estimated gross federal outgo for 1954 at $78.6 billion. Of that total, $57.3 billion—or 73%—goes for national security, meaning primarily the military services, atomic energy and aid to our Allies.

To construction men, of course, the main question is the over-all trend of federal construction spending for 1954. The trend goes up sharply. Hard-rock figures in Truman's budget forecast government outlay of $6.937 billion in cash for 1954 construction.

Compared with cash outgo for the same purpose in the current year ending next June 30—estimated at $6.125 billion—construction spending next year will rise $812 million, or 13%. Making the same comparison with the last fiscal year, which ended June 30, 1952, the 1954 construction outlay will top 1952 spending of $5.216 billion by $1.721 billion, or 33%.

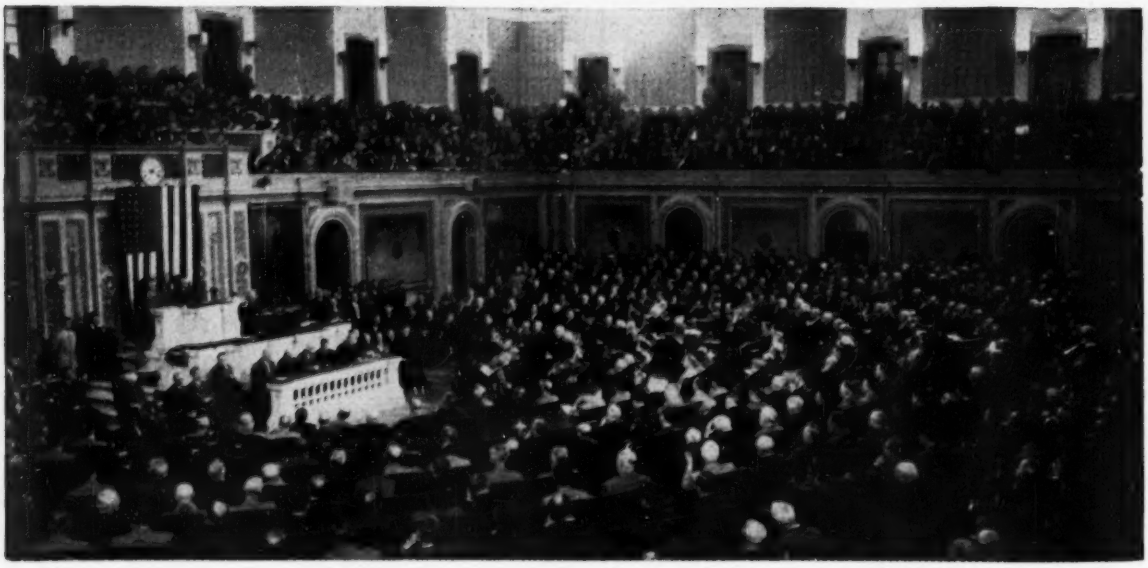
Two branches of federal construction account for the predicted $800-million increase over the current year. As Table I on page 21 shows, atomic

TABLE I

Expenditures for Civil Public Works

(Fiscal years. In millions)

	1952 (actual)	1953 (est.)	1954 (est.)
Atomic Energy Commission	$1,070.8	$1,144.4	$1,657.3
Bureau of Public Roads	435.6	560.6	577.1
Corps of Engineers	485.3	482.8	503.5
Department of the Interior:			
Bureau of Reclamation	207.7	187.4	184.0
Bonneville Power Adm	50.8	54.0	56.0
Office of Territories	33.2	36.1	55.4
Bureau of Indian Affairs	13.7	21.9	21.0
Other Interior	21.7	29.9	30.9
Tennessee Valley Authority	229.5	272.8	301.2
Housing & Home Finance Agency:			
Loans, low-rent public housing	622.3	235.3	258.1
Defense housing and other	15.9	79.8	80.8
Federal Security Agency	134.5	219.0	168.2
Veterans Administration	123.2	102.8	83.4
Civil Aeronautics Adm	55.5	52.3	58.3
Department of State	26.1	40.1	43.3
Department of Agriculture	13.8	18.5	25.1
General Services Adm	22.0	23.5	16.1
Other	17.2	58.9	70.6
Total	**$3,578.9**	**$3,620.1**	**$4,190.3**



energy construction—the larger of the two factors—will step up construction spending by more than $500 million to nearly $1.7 billion during fiscal '54. And expenditures for military construction will increase by almost $300 million to more than $2.5 billion that year.

Spending on military public works will probably continue at that rate some months beyond June 30, 1954. But the military services plan to reach the peak of contract awards during the remaining five and one-half months of fiscal 1953. After June 30 of this year, the rate of contract awards will taper off, but monthly payments to going jobs will build up to their highest level in fiscal 1954.

• **AEC has big plans**—The Atomic Energy Commission has awarded contracts for all but $600 million of its currently authorized construction program. But AEC has an additional $3.4 billion of projects in the planning stage. The agency will ask the present Congress to authorize—and vote money for—these projects. Atomic energy construction probably will go forward at a high level for years.

The total for civil public works, excluding atomic energy construction (Table I), comes to a little more than $2.4 billion. And, of this $2.4 billion, less than $200 million is to be expended on new projects or under new commitments that require congressional action. All the rest is to be spent on going projects and programs that Congress has already approved and—in large part—paid for through previous appropriations.

Thus, Congress will be called on to supply such additional funds as may be needed to carry on $2.2 billion of continuing work during 1954 on authorized civil public works (again leaving out atomic energy construction). Expenditures of only $160 million are estimated for programs and projects that require new congressional authority.

Among these proposed new authorizations, the only doubtful one that looms large in 1954 estimates is defense housing. Truman recommends to Congress a new authorization of $100 million for government-built defense housing and calculates that $50 million will be spent out of this added money in fiscal '54.

Congress already has voted $100 million for government construction of some 10,000 dwelling units in isolated or transitory locations where private builders don't want to shoulder the risks. This money will be used up by 1954. The new Congress won't authorize any additional funds unless the Eisenhower Administration can prove the need for more government-owned defense housing.

• **Little new work**—Truman recommends few other new projects for fiscal 1954. His budget proposes no construction money this time for the Hells Canyon, Hartwell or St. Lawrence projects. But it does urge that the United States join with Canada in building the St. Lawrence Navigation Canal, and he puts in a good word for an early start on Hells Canyon.

Toward development of the unused power at Niagara Falls, the Truman budget shows a $750,000 expenditure in fiscal '54 for further investigations and surveys by the Army Engineers. To finance these studies, Congress is asked for an appropriation of nearly $1 million. By 1954, the Federal Power Commission may settle the Niagara question by licensing New York State to develop the 1.1 million kw of unexploited energy on the American side of the river.

In all, the Truman budget recommends 13 new project starts and six additions to existing projects for the government's three big civil works construction agencies—the Corps of Engineers, the Tennessee Valley Authority and the Bureau of Reclamation. Total estimated cost of all 19 new projects and additions exceeds $365 million. But—even if they should all be approved—the grand total of actual construction money spent on the entire list of 19 in fiscal '54 would be less than $20 million.

• **Ice Harbor pushed**—Biggest of the proposed new starts are the Army Engineers' $104-million Ice Harbor Dam on the Snake River in Washington and a $90-million steam electric power plant at a location now yet determined in the western part of the TVA system.

Of the 13 new projects recommended, 12 go to the Corps of Engineers. Among these, six are primarily for flood control, one (Ice Harbor) is a multi-purpose project, and five are for navigation. Of the proposed additions to existing projects, five call for power generating facilities: new hydro stations at three Reclamation dams and added steam electric units at two TVA plants.

Thus, seven in all of the new projects and additions would produce power. Altogether ultimately they would add more than 1.1 million kw to federal generating capacity. Present generating capacity of all federal power plants in operation and under construction is more than 10,000,000 kw; when fully developed these plants

will have a total capacity approaching 22,000,000 kw. If the proposed new plants and additions for fiscal 1954 are approved the federal generating capacity will be 23,000,000 kw.

On the most revolutionary aspect of future power development the budget makes two significant recommendations: more money for development of atomic power for Naval ships and an increase in funds for research in adapting nuclear reactors to production of electric energy. The budget proposes spending about $90 million in fiscal '54 for construction of research facilities, most of the money for atomic energy research.

• **Trend is up**—Tables I and II together show the trend as Truman sees it for hospitals, highways and other programs that include both federally owned works and federal aid to projects built by states, localities and other governmental units. Table III also gives the forecast for REA loans to co-ops for construction of power and telephone lines.

The trend is definitely up, by Truman's figures. The total budget for construction—$7.187 billion—is 14% higher than it was in last year's budget, when it was $6.295 billion.

Biggest individual item increases include: civil public works, up 16%; military public works, up 13%; defense construction, up 23%; international and semi-public works, up 4%.

Biggest single factor in the general uptrend is construction for the Atomic Energy Commission. The new budget shows requests for $1.657 billion for this purpose—up 45% over the $1.44 billion requested last year.

Funds asked for agricultural purposes—largely flood control work—are next in size: The $25 million sought is 36% over the $19 million asked in the previous fiscal year.

On the military side, the Air Force got the only big jump—the President asked $1.450 billion, an increase of 21% over last year. Both Army and Navy military public works were cut slightly under the previous budget—down 6% for Army, 4% for Navy.

Hospitals, for which the President asked $45 million, were down by 27% under the $61 million requested a year ago; but the $230 million sought for rural electrification was up 2% over the request in the last budget.

The appropriation asked for the Federal Security Administration—$168 million, was down 23% under the 1952-53 budget; and the money asked for VA hospitals—$83 million—was 19% under the previous request.

All but four of the 76 Veterans Administration hospitals authorized in 1947 will be completed or under contract by June 30. The remaining four are expected to be placed under contract during fiscal '54—at San Francisco, Cleveland, Washington, D. C., and Topeka, Kan.

TABLE II

Expenditures, Military Public Works, Defense Construction

(Fiscal years. In millions)

	1952 (actual)	1953 (est.)	1954 (est.)
Military public works:			
Department of the Air Force	$1,048	$1,200	$1,450
Department of the Army	334	568	532
Department of the Navy	369	507	486
Total[1]	**$1,751**	**$2,275**	**$2,568**
Defense construction:			
National Advisory Committee for Aeronautics, construction and equipment	17	26	40
Reconstruction Finance Corp.:			
Synthetic rubber plant alterations[2]	22	36	30
General Services Adm.:			
Strategic and critical materials[2]			
Storage facilities	22	10	22
National industrial reserve[2]	19	3	(3)
Total	**$80**	**$75**	**$92**
Total	**$1,831**	**$2,350**	**$2,660**

[1] Does not include military construction under NATO and the mutual security program.
[2] Includes only that part of the authorization used for construction.
[3] Less than $500,000.

TABLE III

Expenditures for Intertional Public Works and for Semipublic Works[1]

(Fiscal years. In millions)

	1952 (actual)	1953 (est.)	1954 (est.)
Inter-American Highway and Rama Road, Nicaragua	$2.0	$3.1	$5.5
Inter-American Highway (Costa Rica)	....	.2	....
Grants for non-public hospital construction[3]	63.0	60.6	44.5
Grants for hospital facilities in the District of Columbia[3]	....	3.5	5.0
Rural Electrification Administration loans, gross	235.2	225.0	230.0
Loans to educctional institutions, gross	.1	22.0	39.9

[1] Non-construction costs excluded.
[3] Includes semi-pulbic construction only.

• **Big reserve**—There is a huge reserve of future work to be done by the federal government after fiscal '54. To complete projects and programs under construction at that time will cost $11 billion at 1951 prices. In addition, Congress has already authorized nearly $17 billion of civil works projects that won't get started until after 1954. Of this authorized future backlog, the Army Engineers have $8 billion, the Reclamation Bureau more than $3 billion, the Forest Service $1.5 billion, and TVA more than $1 billion.

The Corps of Engineers has working drawings completed, ready for construction awards, on $2 billion of this work, and advance planning in various stages of completion on another $3 billion of authorized projects. The total of planned direct federal projects ready for construction is $2.9 billion, with another $9.5 billion of project plans in process of preparation.

• **Planning funds**—Truman's budget recommends about $55 million in fiscal '54 for collection of the basic data so essential to wise planning of natural resources development and now so sadly lacking. This money would cover geodetic and topographic mapping, geologic and soil surveys, and assembly of hydrologic and climatologic data.

For fiscal 1954, the budget also recommends about $240 million for preliminary studies of river-basin and other construction programs.

Push toll highway proposals in five states—other programs

Five states consider plans for big toll roads—Indiana lets first contracts for its super-road—other highway plans

With most state legislatures in session, proponents of toll highways moved fast last week to push their proposals.

In five states—Virginia, Kentucky, Connecticut, Rhode Island and Iowa—there was action on proposed plans; Indiana let first contracts on its $150-million road; and other states announced huge highway programs.

Perhaps most interesting of the week's developments—because of the reasoning behind it—was the proposal submitted to Connecticut Governor John D. Lodge by a special bi-partisan committee on highway fiscal resources.

Said the committee:

Connecticut is a "bridge state," over whose highways travel many vehicles moving between the metropolises of New York, Boston, Providence and the like, and to and from vacationlands and industrial areas. Owners and drivers can now go through the state (except on the Merritt Parkway) without spending any money or paying any taxes in the state—leaving the burden of maintenance of the roads they use on local taxpayers.

The answer must be a grid of superhighways, criss-crossing the state, financed by bond issues against toll revenues, and kept separate, financially, from all other general roads of the state.

• **Must be a system**—An added point, the committee said, must be that any superhighway must be part of a net—of a planned system.

"It is unrealistic," said the report, "to think that a fragment of a deluxe roadway such as the Merritt Parkway can pay for itself. In the opinion of the committee no such fragment can pay for itself—and tolls cannot be removed from one such fragment before costs of other sections are paid."

Present and proposed elements of the grid system would include: the Merritt Parkway; the Wilbur Cross Parkway; the Wilbur Cross Highway; and proposed reconstruction of parts of the Boston Post Road and other highways running through the state, generally in a northeast-southwest line.

• **Kentucky and Tennessee**—While Connecticut studied its problem on a state-wide basis, Kentucky and Tennessee were attacking the traffic situation on a more localized basis.

Kentucky's Gov. Lawrence Weatherby told his state's legislators of plans for a 40-mile, $22-million turnpike between Louisville and Elizabeth Town (ENR Jan. 8, p. 25), and then made it clear that this road would be only a first step in an eventual state-wide turnpike that would run from the state's northern border on the Ohio River to Nashville, Tenn., 187 miles distant. Such a road would become an important link in a chain of turnpikes from New England to the South.

While Kentucky was looking at definite turnpike proposals, Tennessee's legislature also considered a number of bills that would authorize appointment of a turnpike commission or authority to build super-roads across that state.

Retiring Gov. Gordon Browning (who was succeeded Jan. 15 by Frank G. Clement) said in his final message to the legislature that the state can no longer bear road system expenses entirely on a tax basis, and that some toll system should be established.

Legislative interest in the proposals was heightened when it was learned that the governors of Ohio and Kentucky are planning a February meeting to discuss possibilities of linking the two states by toll expressways. A Cincinnati-Louisville-Nashville Turnpike would dump heavy traffic loads into Tennessee.

• **Other toll proposals**—Three other states were heavily involved in studies of toll-road financing.

Officials of the Old Dominion Turnpike Corp. sat down in New York this week with financial experts to make another try to arrange bond financing for a $60-70-million highway that would cut across the southern part of Virginia from near Bluefield, W. Va., to near Mt. Airy, N. C.

In this case, the Virginia portion of the road would be financed by bonds issued by the corporation—a private group operating under special permissive state legislation. The corporation would own the road and set tolls until the bonds were paid off, then be dissolved and the road would revert to the state. The financial moves were inaugurated after the state granted the corporation a one-year extension (from Feb. 20) of the time in which it is required to start construction.

In Rhode Island, newly inaugurated Governor Dennis J. Roberts urged a quick report by a special legislative commission on studies already completed for a proposed $40-million superhighway system; and in Idaho, a member of a special legislative commission released a report from a Pennsylvania consulting firm (Gannett, Fleming, Corddry and Carpenter) expressing the opinion that a cross-Iowa superhighway, to cost about $141 million, could pay for itself.

And Indiana's State Toll Roads Commission awarded two engineering contracts for preliminary work necessary to get its $150-million turnpike under way. A contract for selection of route and for cost surveys was awarded to the J. E. Griener Co., of Baltimore; and another contract, for traffic studies, was awarded to Parsons, Brinckerhoff, Hall & Macdonald, of New York City. Amounts involved were not immediately announced.

• **General programs**—While these states worried about toll roads, many other states were concerned with more prosaic problems—principally how much work to do and how to finance normal maintenance, extension and repair.

In Idaho, a legislative group recommended a $30-million state bond issue to finance general highway construction. The state—now free of bonded debt—would secure the new issue with a new tax on trucks, an increase in automobile license fees and an increase in load limits on logging trucks. And South Carolina announced a plan for $22 million worth of maintenance and new construction for the coming year. North Carolina—already with a $200-million program under its belt—planned further means of increasing revenue in order to push road work.

Pennsylvania was considering boosting its gas tax to 6 cents a gallon to yield an added $20 million a year in revenues.

Ohio Turnpike granted access to B&O land

Threatened with condemnation proceedings, the Baltimore & Ohio Railroad has agreed to grant the Ohio Turnpike Commission access to land for building twin bridges over the Cuyahoga River in Summit County.

One pier will rest on B&O property.

The bridge, largest of the structures, for the turnpike, will be 2,650 ft long. Construction had been delayed because of earlier refusal by the railroad to allow the contractor on its property—an action prompted by lack of clarity of responsibility for men and equipment.

Federal construction policies raked; more controversy ahead on revisions

Materials policy commission findings questioned—government agencies oppose major changes

The biggest blast at the construction industry in many a year came last fall from the "President's Materials Policy Commission"—the group of experts commissioned to examine the country's need for and use of all kinds of materials.

The commission's report (ENR June 26, 1952, p. 21) claimed that the construction industry—for a number of reasons—was a huge and greatly wasteful consumer of many key materials that might be scarce in the years ahead. And the commission made many recommendations for putting federal pressure on the industry to make it change.

But now the National Security Resources Board has polled the government agencies that have to do with construction—and puts on record the fact that many of them are opposed to some of the key Paley proposals.

Here's the government agency lineup on the hottest Paley recommendations:

• **Code opposition**—For instance, the proposal for national building codes meets with objection inside the government—and the idea of using FHA insurance to impose national codes on all builders and all areas of the country is opposed by every agency that NSRB polled.

The Paley report—and the NSRB rundown of criticisms by federal agencies—will be the raw material that will be worked over by an Eisenhower-approved "Citizens Conference on Natural Resources," to be held in Washington in March. Businessmen and others will get a chance then to answer the Paley proposals—and put forth their own counter-proposals.

There's no doubt that it will take some time before any action can be expected in this field.

• **National standards of building construction**—Most of the agencies went along with the idea of having such national construction standards. But the Federal Security Agency—which has a hand in the financing of school and hospital construction—suggests that the administration and application of the code should be "decentralized to the officials having operating responsibilities."

In other words, the FSA people are of the opinion that in their field they should have the authority to apply the standards to the types of construction for which they have more knowledge than any other federal group.

Department of Labor officials also suggested that the advisory board to the agency having authority to draw up the code should include representatives of state and local governments, labor, and the construction industry. Paley commission had recommended that the board include representatives of government agencies and "non-government technical groups."

In other words, labor obviously wants in on anything that might hit hard at established practices in the building trades.

• **The national building standards should be based on performance**—Government agencies agreed with this in principle, but the Housing and Home Finance Agency cautions against trying to go too far in too much of a hurry.

NSRB itself goes along with this same idea, and recommends that nothing be done about this right away. The whole subject, it believes is one for "further investigation by the agency designated" to draw up the standards.

• **Federal mortgage insurance should be denied housing that does not conform to the national code**—The Housing and Home Finance Agency disagrees emphatically with the NSRB report. It quotes the agency as follows: "FHA experience has demonstrated the infeasibility of providing completely uniform minimum construction requirements for all the various mortgage insurance programs in all sections of the country." HHFA claims that the national building codes should be used only as "guides"—not as mandatory requirements in this matter.

Department of Defense also stated the real problems involved in "using the FHA mortgage insurance program as a device for enforcing national building standards." They recognized what certainly is a fact—such an attempt would encounter "local tradi-

(*Continued on column* 1, *page* 26)

Court affirms state water rights

States must approve diversion despite power act; U. S. attorneys see setback for federal stream regulation

State water-use rights were not extinguished by the federal Water Power Act of 1920: They still exist, but cannot be used for power development (since passage of the act) without a license from the Federal Power Commission.

That is the gist of a decision of the U. S. Court of Appeals for the District of Columbia circuit, rendered Dec. 31 in a suit brought against FPC by the Niagara-Mohawk Power Corp. The court majority went on to say that FPC can only lawfully issue a water-power license if the applicant has the right under state law to divert water needed for the development.

If allowed to stand, FPC attorneys see the decision as a sweeping setback for federal regulation of navigable streams. FPC Assistant General Counsel Willard W. Gatchell, who argued the case before the court in November of 1951, said then that such a decision would have the effect of a "state veto" over water-power development.

The dispute grew out of an order issued in 1950 by the FPC which directed Niagara-Mohawk to exclude certain payments it had made for water-use rights in figuring its amortization reserve account. The commission contended that these water rights "evaporated" when the company received its federal power license in 1921, and hence no compensation was required.

The majority opinion concludes:

• The disputed water-use rights are valid property rights under the law of New York.

• "The Water Power Act of 1920 (now Part I of the Federal Power Act) did not extinguish the rights but simply forbade their use without a federal license."

• "Such a license is not the source of water rights but a permission to exercise usufructuary rights acquired pursuant to state law."

• ". . . Payments made by the petitioner under its contractual obligations as lessee of the water rights are proper operating expenses."

The court thus found that FPC had erred in disallowing payments for the rights and in increasing on that account Niagara-Mohawk's amortization reserve liability. FPC was directed to modify its 1950 order in accordance with the views of the court.

tions, customers' prejudices, and pressures."

Again, NSRB suggested that the problem be first investigated by the agency that's named to draw up the code in the first place.

• FHA should not insure mortgages in areas which have building codes and zoning laws which do not permit use of alternative materials permitted by the national standards—Every agency takes exception to this one as being a too flagrant and drastic use of federal pressure to whip local officials into line with policies laid down by Washington. Departments of Defense and Labor, HHFA, and the VA all voted against the idea.

HHFA told NSRB: "This agency is not in accord with (this) device for speeding up local acceptance of alternative materials permitted by proposed standards . . . desirable as a speed-up in the adoption of more reasonable codes may be, the proposed penalty appears too drastic in comparison with any benefits to be gained either nationally or locally."

As NSRB points out, such a policy if it ever became effective would discriminate against home owners who have to have FHA insurance to buy a home. If the community refused to modify its code to conform, these people would be denied benefits through no fault of their own.

The government agencies took the same stand against a Paley recommendation that the same procedure be applied to housing mortgages that are insured through the Veterans Administration.

• Housing research now done by HHFA should be maintained and expanded—The Veterans Administration took sharp and emphatic exception to this recommendation by voicing a criticism that coincides with the views that are held by most of the members of the construction industry—the private research and competition for markets make government activities in this field worthless.

The Paley report's answer to this was as follows:

Professional and technical associations of engineers, architects, and builders exert some influence on technical progress but their approach at best appears to be sporadic and unorganized.

• Producers of materials conduct considerable research limited chiefly to improving and developing particular products—There has been little research in the performance of products when they are combined with others to form elements and components of structures.

Dodges architect-engineer distinction in suit over licensing provisions

Tennessee court refuses to delineate practice of architects and engineers in license board action

Judge Thomas A. Shriver of the Chancery Court in Nashville, Tenn., has refused to define the fields of architects and engineers as separate activities under the registration law for architects and engineers in Tennessee.

Tennessee has a single act covering the registration of the two professional groups and a joint registration board made up of three architects and three engineers.

Chancellor Shriver's decision was rendered in a suit brought against the registration board by Stuart Fonde, a Knoxville home builder and a registered engineer, after the board had objected to his designing the homes he built. The board held the design work to be the practice of architecture. And Fonde is not licensed to practice architecture.

Fonde, in his suit, asked the court to determine and decree that his activities "constitute and are lawfully a part of the practice of engineering, and that such activities and pursuits are authorized by his certificate of registration as an engineer." He also asked for a permanent injunction to restrain the registration board from interfering with his activities and pursuit as an engineer.

When the suit came to trial, both the Tennessee chapter of the American Institute of Architects and the Tennessee Society of Professional Engineers intervened in the case; they requested "a declaratory judgment and decree defining the rights of complainant as a registered engineer under the terms of the act."

• Refuses injunction—Chancellor Shriver refused to grant the injunction or to issue a decree defining Fonde's rights as an engineer. In so doing he said the court "cannot define and delineate the functions of architects and engineers in such a way as to draw a line of demarkation between them which could be successfully applied in practice."

He went on to hold that the Tennessee legislature "has not attempted to define and delineate the practice of architecture and engineering as separate fields for purposes of regulation, and unless and until the legislature makes such a definition and lays down the requirements of practice in those fields the courts will not undertake to invade this field of legislation."

Shriver held that "the record does not demonstrate sufficiently that the complainant herein was engaged in activities that constituted a violation of the law at the time he was threatened with prosecution.

"However, the court feels that it would be improper to grant a permanent injunction against the action of the board in seeking to discipline or act upon the question of complainant's activities as engineer since such injunction would invade the discretionary powers and rights of the board."

Shriver pointed out that "it is significant that nowhere in the [1921] act as amended [in 1925] is there an attempt by the legislature to define the qualifications, activities or functions of either an architect or an engineer.

"It is likewise significant that as far as the statutory law in Tennessee is concerned architecture and engineering are not separated into two different fields, but are regulated by and under the same board."

Gut Dam removed

The Canadian Dredge and Dock Co., Ltd., completed the removal of Gut Dam at the head of the International Section of the St. Lawrence River Jan. 7. This meant that the work was finished nine days ahead of schedule (ENR Nov. 13, 1952, p. 27).

This is part of the Canadian government's program to develop the power potentialities of the St. Lawrence River.

The federal government agreed to remove the dam in an attempt to quiet the protests of residents along the shores of Lake Ontario who claimed that the dam was partly responsible for recent high water.

The 900-ft structure was found to be a rock-fill dam built around a timber crib of solid construction. A temporary earth dam was thrown across the gap to provide quiet water in which the contractor's dredge could work. Rock and earth fill have been dumped in a deep section of the river near either Adams or Gallup Islands.

Plans can now get under way for the deeper canal that Canada is planning to build.

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Congress rolls 'em fast

New construction bills pour into legislative hopper as 83rd Congress goes into session

In the avalanche of some 1,500 bills introduced during the first week of the new 83rd Congress, there were more than a score of direct interest to the construction industry. Many of them are on pet projects of individual congressmen—who introduce them at every session—many are highly controversial (and contradictory of each other), others simply will get lost in the legislative shuffle. But from the pile will come the hard core of construction legislation that will get committee attention during the session.

• **Water control first**—Not suprisingly, 11 of the 20-odd construction bills concern matters of flood control, irrigation and other water control affairs.

Two of these—concerning valley authorities—were almost directly contradictory, and a third called for investigation by a congressional committee. H.R. 326 (McDonough, Calif.) would prohibit the establishment of a valley authority in any state that would be affected thereby substantially, until the citizens of that state had voted in favor of establishment of such an authority. But H.R. 1309 (Wier, Minn.) called for the immediate establishment of a Missouri Valley Authority to provide for unified water control and resource development on the Missouri River, its tributaries and watershed—without any reference to local option. And the third measure, H.R. 195 (Wickersham, Okla.) called for establishment of a temporary commission to investigate the costs and effects of watershed programs for flood control in agricultural watersheds.

Other bills introduced called for: authority for the Secretary of Interior to build, operate and maintain the Trinity River development (Texas), and the Central Valley project in California (H.R. 123); the appointment of a board of engineers to examine again the proposed Central Arizona project (H.F. Res. 56). A series of bills (H.J. Res. 69, H.R. 236, H.R. 1097, H.R. 1307, S. 116) would: authorize a sum, up to $80 million, for flood protection along the Minnesota River Valley; approve construction and operation of the Fryingpan-Arkansas project in Colorado; authorize construction and operation of the initial phases of the Ouachita River Basin Reclamation project in Oklahoma; authorize construction and operation of the Canton Reclamation project, also in Oklahoma, and approve construction of flood-control improvements to the Mississippi River levee system.

Rep. Kilburn of New York introduced H.J. Res. 2 to authorize the United States to go ahead with Canada in construction of the St. Lawrence Seaway, by authorizing New York state to build power facilities (ENR Jan. 15, p. 19).

• **Highway measures**—Most interesting of the highway measures introduced was H.R. 7, introduced by Rep. Dingel of Michigan, which would set up a federal superhighway authority with authority to plan, build and operate a 100,000-mile superhighway system. Routes would be east-west and north-south across the U.S. The plan envisages possible toll charges on such a system—a reversal of the traditional congressional attitude on federal-aid roads (ENR Jan. 15, p. 19).

Another bill, H.R. 14, would increase the amount authorized to be appropriated by the Federal Aid Highway Act of 1952 from $25 million to $225 million.

• **Other matters**—Other major bills include:

H.R. 510, which would provide for the award of certain public contracts to bidders from areas where a very substantial labor surplus exists, where such bids do not exceed by more than 5% the most advantageous bids submitted from other areas; H.R. 1067, to prescribe policy and procedure in connection with construction contracts made by the executive agencies; H.R. 28 would provide for construction of facilities for an additional 16,000 beds in Veterans hospitals.

Pennsylvania undecided on Incodel

Governor Fine's special committee is expected soon to make the report that will influence his recommendation.

Pennsylvania's Gov. John S. Fine disclosed in his opening address to the 1953 legislature last week that the report, from his committee named to make "a comprehensive study" of the Incodel Plan, is still hatching. The four consulting firms employed were reported last week (ENR Jan. 8, p. 24) to have submitted results of their one-year study.

Fine said he would make a recommendation on the subject "at a later date." During the 1951 session of the Pennsylvania legislature, Fine killed a proposal that Pennsylvania join with the other three states in a compact to act on the half-billion-dollar scheme for integrated development of Delaware water supply.

Calling the program the "Delaware River Division," the Pennsylvania governor told the legislators (his party controls both branches of the assembly):

"Last year New York City filed a petition with the U.S. Supreme Court seeking modification of that court's decree limiting to 440 mgd the quantity of water which New York City may divert from the Delaware watershed for water supply purposes.

The petition asks a total diversion of 800 mgd.

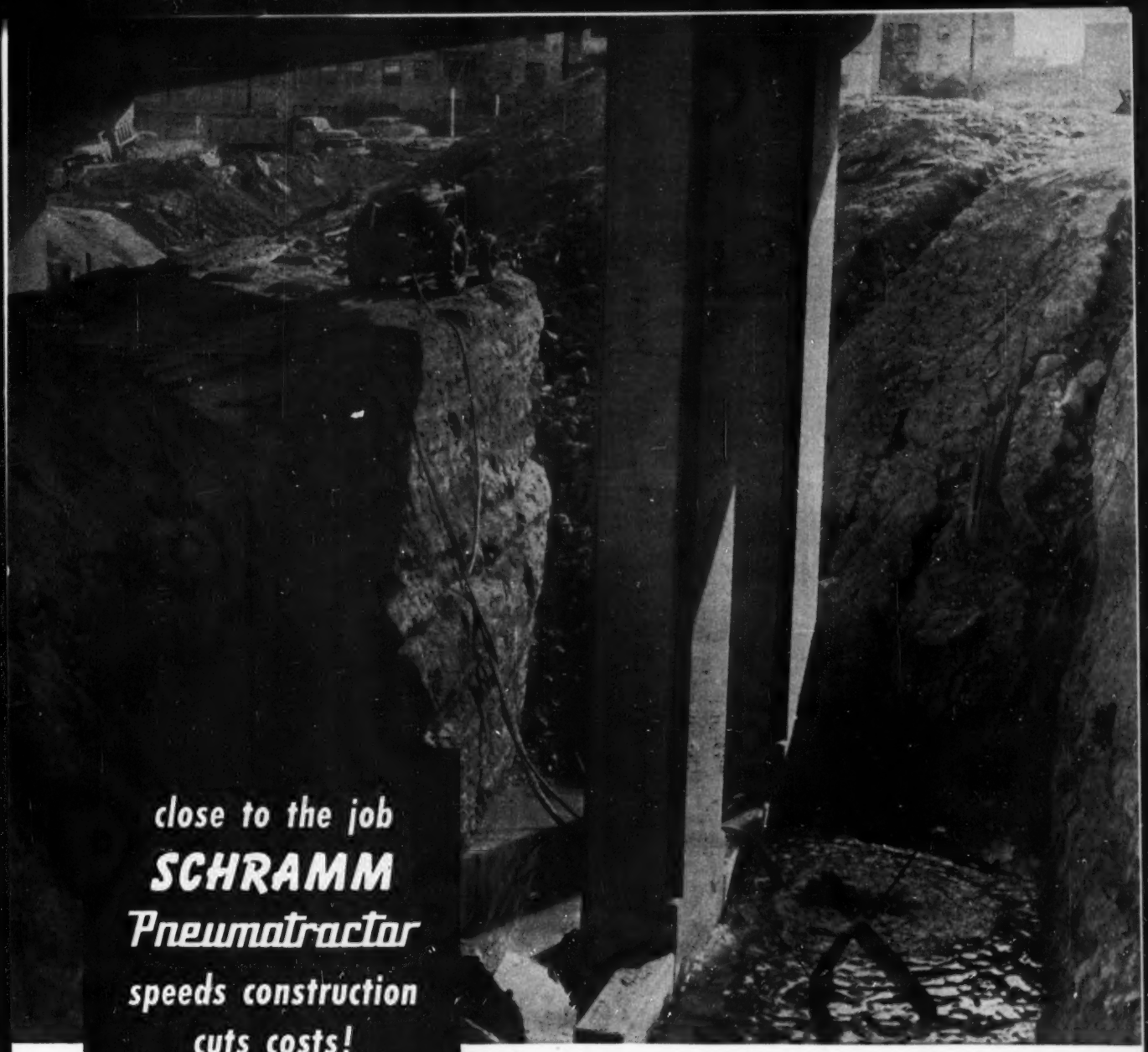
"Our Justice Department is vigorously opposing this petition. It is apparent to us that the future needs of southeastern Pennsylvania and southern New Jersey will greatly exceed the future needs of New York City for the waters of the Delaware. We have in mind, too, that an adequate water supply is essential for Philadelphia and its suburban communities and for the tremendous expansion of industry in the Morrisville area.

"This is a question of paramount importance to Pennsylvania. Because it is, I created the Delaware River Water Basin Committee. That committee is making a comprehensive study of the entire problem, including the question whether approval of the Incodel Plan—a proposed compact between New York, New Jersey, Delaware, and Pennsylvania—would be in the best interest of Pennsylvania.

• **Asks sewerage money**—State financial aid for Pennsylvania communities unable to finance the construction of state-ordered sewage treatment plants was hinted by Governor Fine in address to the legislature's opening session.

Some 60 municipalities in the Susquehanna River Basin have been described as stalling for several years on state construction orders, pleading insolvency and asking for further delays.

"I realize," Fine said, "that there are municipalities which may not be able to shoulder alone the financial burden of this program therefore, in their interest of effecting a total elimination of pollution of our streams, the general assembly should consider providing funds to aid these distressed municipalities.



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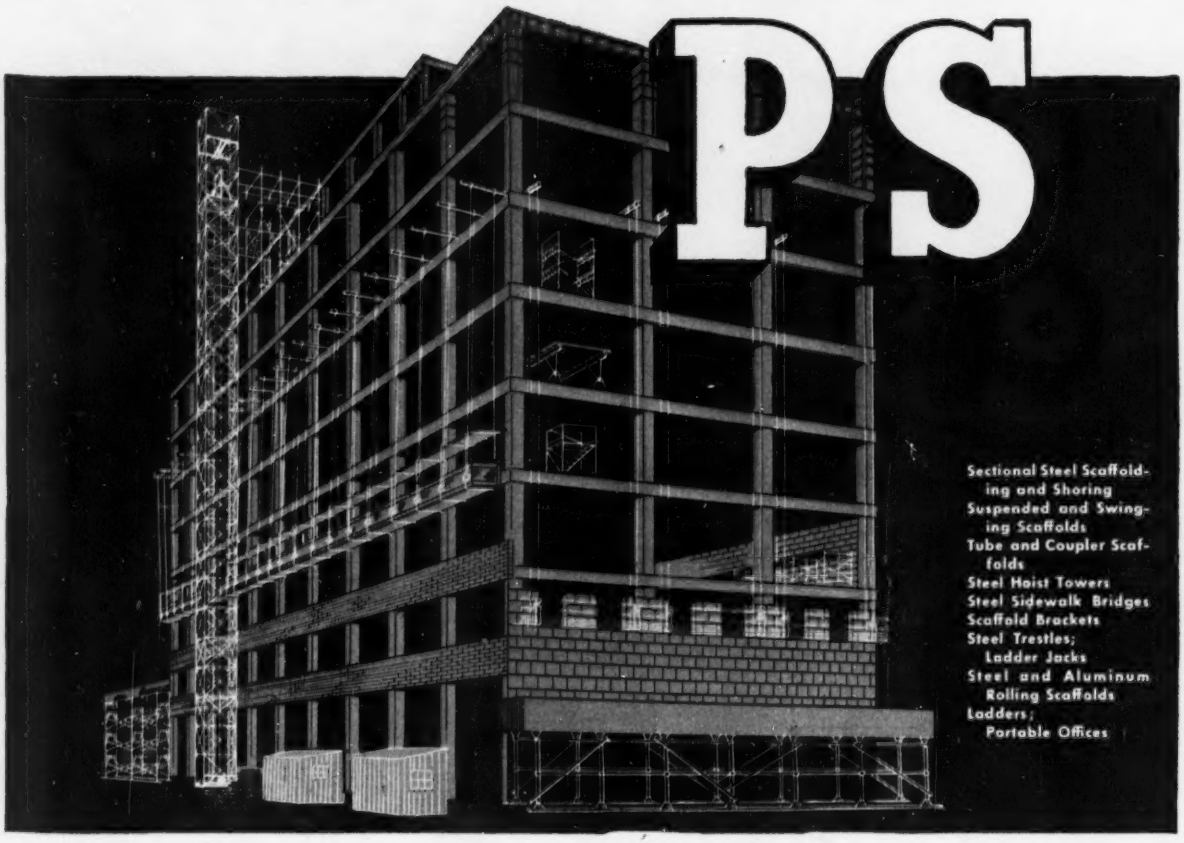

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New association of bargaining groups activated for engineers

The Engineers and Scientists of America, an affiliation of independent collective-bargaining groups of engineering employees, was activated Dec. 31, 1952.

It was on that date the constitution of the new organization was ratified by the last of the eight associations which were required under the constitution to set up the ESA as a going concern.

Organization of ESA has been under way since August, 1951, as a successor to the National Professional Association of Engineers, Architects and Scientists, which included only four West Coast groups. At conferences held in Chicago in February and May of last year (ENR March 6, 1952, p. 105 and June 19, 1952, p. 32) representatives of 21 collective-bargaining groups, having a total membership of about 15,000, met to develop a form of organization that would be acceptable to the largest possible number of employees.

The constitution that now has been ratified by eight organizations is the outcome of those meetings. Six more associations are expected to ratify the constitution before the ESA holds its first national convention, now scheduled to take place in Los Angeles, Feb. 21-23.

Names of the charter organizations and of the companies employing their members are given in the accompanying table.

• **First nation-wide contract**—One of the largest of these bargaining groups, the Council of Western Electric Technical Employes (National), representing 4,500 engineering employees in various plants of the Western Electric Co., on Dec. 15, signed the first nation-wide collective-bargaining contract in the engineering field. Last June the National Labor Relations Board certified the CWETE (N) as the nation-wide bargaining unit for all non-supervisory engineers and scientists of Western Electric Co.

In anticipation of the activation of the Engineers and Scientists of America, the CWETE contract with Western Electric specifies that officers of ESA may sit in on negotiation meetings.

• **Membership and objectives**—Although the 14 groups now considered most likely to ratify the constitution are composed mainly of engineers in other categories than civil, some civil engineers are represented in component organizations.

For instance: the Engineers and Architects Assn., with about 400 civil engineers on the membership rolls, represents a substantial number of civil engineers as does the parent group, National Professional Association of Engineers, Architects, and Scientists (500).

According to the convention spokesmen, the national organization would have as its main objectives: providing an ethical representation without affiliation with non-professional labor organizations; assisting in the formation of collective bargaining units.

Charter members of Engineers and Scientists of America

Association	Where employed
Engineers Association New Hyde Park, N. Y.	Sperry Gyroscope Co.
Minneapolis Federation of Honeywell Engineer, Minneapolis, Minn.	Minneapolis Honeywell Regulator Co.
Engineers Guild of Oregon Portland, Ore.	Timber Structures, Inc., Municipal Engineers of City of Portland, Oregon State Highway Dept.
Seattle Professional Engineering Employees Assn., Seattle, Wash.	Boeing Airplane Co., Continental Can Co., Isaacson Iron Works, G.E. X-ray.
Engineers and Architects Association Los Angeles, Burbank, San Diego, Calif.	Lockheed Aircraft Corp., Lockheed Aircraft Service Corp., Consolidated Vultee Aircraft Corp., Rheems Mfg. Co., City and County of Los Angeles, California State Highway Dept.
Engineers Association of Arma Brooklyn, N. Y.	Arma Corp.
San Francisco Area Group of Professional Employees, Oakland, Calif.	Pacific Gas and Electric Co., employees of the Western Association of Engineers, Architects and Surveyors, East Bay Municipal Utility District, City of Alameda.
Association of Professional Engineering Personnel, Camden, N. J.	RCA-Victor Division (Camden Plant).
Listed below are the remaining six prospective charter member units:	
Tennessee Valley Authority Engineers Association, Chattanooga, Tenn.	Tennessee Valley Authority.
Research and Engineering Professional Employees Association, Whiting, Ind.	Standard Oil of Indiana.
Association of Engineers and Engineering Assistants, Drexel Hill, Pa.	G.E. Philadelphia Switchgear Works.
Council of Western Electric Technical Employees (National), Newark, N. J.; Oak Park, Ill.; Baltimore, Md.	Western Electric Co.
Southern California Professional Engineers Assn., Los Angeles, Calif.	Douglas Aircraft Corp., Southern California Gas Co., Los Angeles Dept. of Water and Power.
Association of Industrial Scientists, Emeryville, Calif.	Shell Development Co.

Regional wage board continues crackdown on overpayments

Paducah situation may be checked next for violations by construction firms in the A-plant area

Continuing its drive against overpayments in the construction industry (ENR Sept. 4, 1952, p. 356), the Wage Stabilization Board may start checking the situation in the Paducah, Ky., area, Karl W. Stoffel, chief enforcement officer for the Ohio-Kentucky region, reported recently.

Stoffel, whose headquarters is in Cleveland, Ohio, told ENGINEERING NEWS-RECORD that the current campaign against disallowances has resulted in tax disallowances amounting to $244,636 in his region.

Penalties are mounting rapidly. "In December there was almost $63,000, and almost all of it in the construction field," Stoffel said.

• **AEC plant**—Places checked by the regional office recently include Dayton, Cincinnati, Columbus, Toledo, Cleveland and Portsmouth, Ohio, where construction is due to start in earnest on the new AEC plant. Although there have been some minor violations reported at Portsmouth, it will be watched more closely as building starts to pick up. Stoffel said the worst places for violations have been Dayton, Cincinnati and Cleveland.

The current drive has turned up violations mostly among small bricklaying and plastering firms. "The larger firms tend to have a regular staff and work is steadier," Stoffel said.

Stoffel added: "We have had some roofing cases in Paducah, but they have been small with no penalties imposed. Some half-dozen violators have agreed to pay the unit scale. But when a plant like that (AEC plant) is built it affects both residential and commercial building. We haven't hit Paducah yet, but it may be next."

The regional office has a backlog of about 1,100 cases. There have been 52 cases so far in which penalties have been entered.

On Dec. 30, four new cases in the Cleveland construction field were announced. Four small operators, one contractor and three mason and plastering firms, signed disallowances amounting to $6,950.

It is not expected that wage law revision or even repeal will affect the case load of the regional boards. The existing backlog will keep the boards busy long after the law has been dropped.

In previous stories of wholesale wage violations the local builders and contractors have denied that the practice is widespread.

Admitting that there have been some overpayments, the builders point out that when workers are scarce high rates are in order.

Contractor sues union for $100,000 in damages

A $100,000-damage suit was filed in Milwaukee, Wis., recently against the AFL sheet metal workers' union and its representatives.

The suit was filed by A. E. Strutz, Jr., and his wife, co-partners in the Strutz Heating and Air Conditioning Co. They charged that the union and its representatives damaged their business by refusing to supply them with union labor.

The complaint charged that pressures placed on the company and its two operators have cost them an estimated $65,000 in business losses and have injured Strutz's health to the extent of $35,000.

In September, 1952, the state employment relations board found the union guilty of attempting to interfere with the business operations of the Strutz firm. The board ordered the union to desist from any further picketing of jobs of the firm, from boycotting or inducing a boycott, and from conspiring to prevent the company from obtaining "materials, equipment and services."

Arizona anti-picketing law upheld in first court test

Arizona's new anti-picketing law against secondary boycotts has been held constitutional in a superior court test at Phoenix.

The Phoenix Building and Construction Trades Council and three AFL affiliates were restrained from picketing a building project at Southwestern Co-operative Wholesale.

The Co-op plant had been destroyed in a $600,000 fire. Rebuilding was begun, using Co-op employees who were out of work because of the fire. The Trades Council then set up a picket line.

The Co-op, during the trial, testified that it was not paying union wages. Workers were receiving their regular Co-op pay.

The court ruled that the case was within the Arizona statute because there was no dispute between the Co-op and its employees.

The council said it would appeal the case to the Arizona Supreme Court. The basis of their fight against the law was that the federal Taft-Hartley act is designed to cover the entire field of labor-management relations.

Akron carpenters form unit to negotiate wide contract

Seven local unions in the Akron, Ohio, district have formed a district council for negotiation with local contractors on an area basis. The district encompasses about three counties. And the carpenters will deal with about 150 contractors.

The council expects to benefit from the uniform wage and working conditions. Another advantage foreseen is the strengthening of the smaller unions by having the backing of the larger groups.

Contractors are supposed to benefit from having to deal across the bargaining table with only one group.

The district council plan will enable contractors to hire through the central agency without worry over jurisdictional lines in the three counties. This last is believed important in connection with the work on the Ohio Turnpike soon to start in that area.

Open shop employers attack city wage scale

A law suit attacking prevailing wage rates fixed by the Baltimore Board of Estimates for workmen on municipal jobs will be pressed, as a result of a ruling by Judge Michael J. Manley last week. The court overruled demurrers filed by the city and certain trade union members, and ordered the city and the union representatives to file an answer to the suit within 20 days.

Two companies that employ non-union labor filed the suit on the ground that the minimum prevailing wage fixed by the estimates board under a city ordinance actually is the maximum union wage and that the wage standard already has cost the taxpayers $4 million.

The complainants, Roland Electrical Co. and Colwill Construction Co., also attacked the validity of the ordinance and charged that the board had no guides or standards to determine the prevailing wage.

Through Wilson K. Barnes, attorney, the companies also alleged that the estimates body consulted only with a union official in fixing the wage scale and that no hearings were held or testimony taken.

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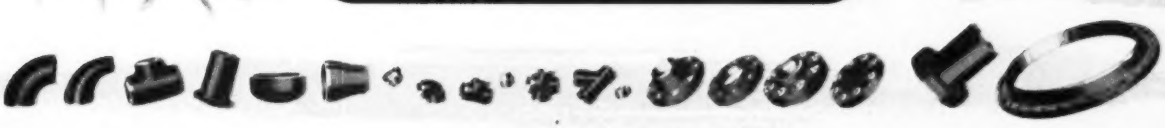

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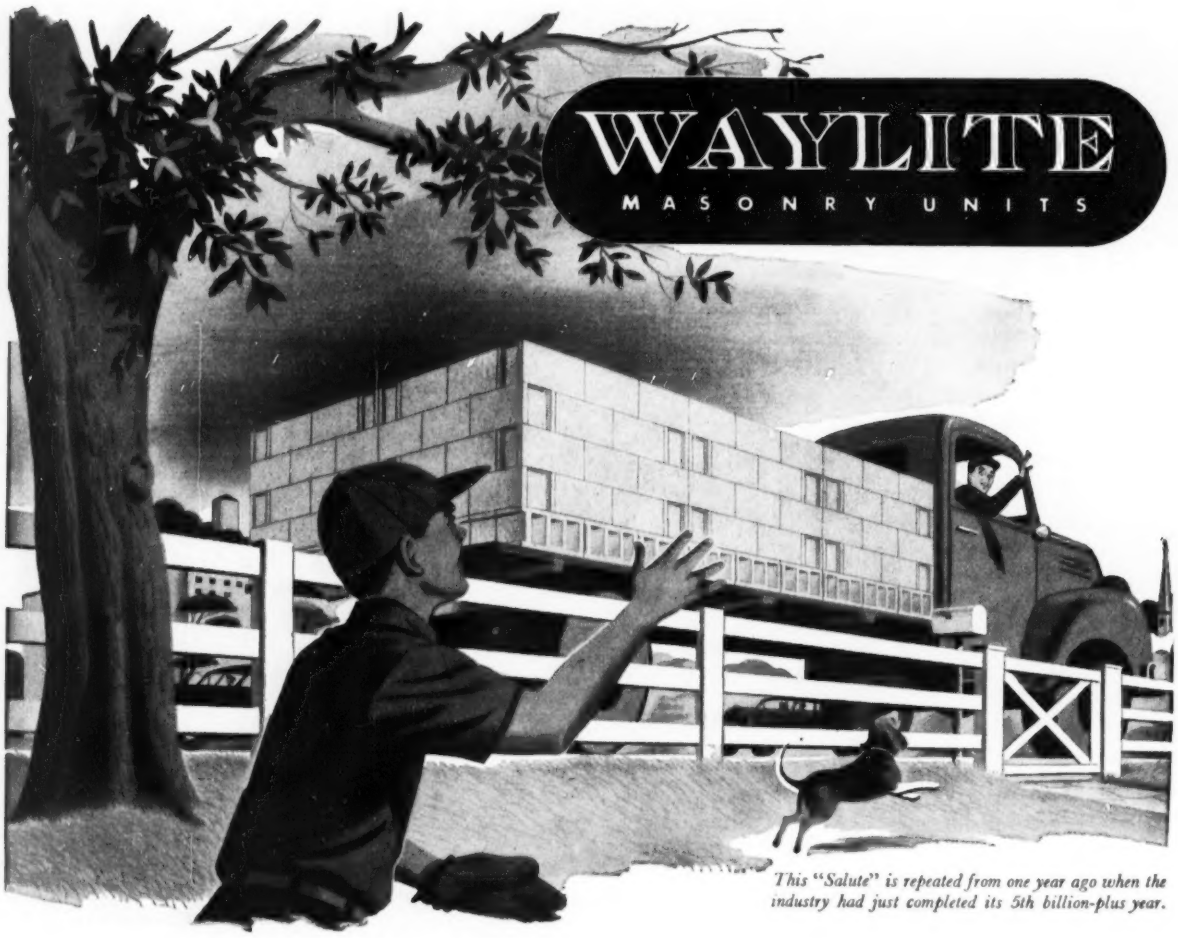


This "Salute" is repeated from one year ago when the industry had just completed its 5th billion-plus year.

"UP-TO-DATE BRIDGES are needed at thousands of sites on the roads of America. Old ones can be replaced quickly and cheaply with prestressed units," says Robert Petersen, president of Concrete Products Co. of America. He holds concrete from beam tested to failure. Wire strand marks are undamaged, indicating no rupture of bond.

Factories for prestressing: big business in Pennsylvania

A RESTLESS concrete pipe manufacturer is one of America's real pioneers in prestressed bridges.

In 1949, when Philadelphia engineers were examining European methods cautiously, in preparation for the famous Walnut Lane Bridge (ENR Sept. 21, 1950, p 32), two men from Concrete Products Company of America joined the inspection trip that included visits to prestressing projects in six European countries.

The two, Robert Petersen and B. J. Baskin, are president and chief engineer, respectively, of Concrete Products Co. of America.

Shortly after acquiring control of the 28-year-old company in 1940, the directors decided to seek new products that would be adaptable to their factories in Pottstown and Pittsburgh. One new project was to precast bridge units. This idea was encouraged by L. A. Porter, Pennsylvania state bridge engineer, who saw advantages in factory-made units. The benefits were close control of production conditions and effective inspection. Careful tests in collaboration with the State Highway Department led to official approval of Concrete Products' design, and the state bought a few bridges for sites where quick replacement was desirable.

Then Petersen saw in prestressing a chance to make a still more useful product. He returned from Europe fired with enthusiasm and determined to find ways to combine prestressing's design efficiencies with those of factory-production.

With Mr. Baskin, he worked out pretensioning techniques adapted to a precast, prestressed beam design that the two men had developed.

A test beam was manufactured, and in July, 1950, state highway engineers witnessed a test, quickly approved the new member for substitution in existing contracts for precast bridges. No price change was involved.

Those 1950 contracts brought eight small prestressed bridges to Pennsylvania. Since then, Concrete Products has sold 73 bridges. Today, bridges form 25% of Concrete Products' business volume.

Delivered prices range from $5.00 to $10.50 per square foot, depending upon the span length, but not on the distance from the factory. Normally a general contractor buys the bridge units, but in some cases the state buys them for use in force-account installations.

Concrete Products operates only in Pennsylvania, but now its methods are being applied, under licensing agreements, in Wisconsin, Indiana and Illinois, and negotiations are under way in other states.

F. Hurlbut Co. of Green Bay, Wis., erected its first prestressed bridge last September. Indiana Prestressing Co., Bedford, Ind., now is in production, and Illinois Prestressed Concrete Co., Springfield, is getting its casting yard set up.

Agreements call for: The use of high-tensile wire strands on fixed casting beds; wet-placement of concrete, to assure full concrete bond with the strands; and vacuum processing to reduce water-cement ratio.

• **Plant set-up**—Revamping concrete pipe plants at Pottstown and Neville Island (Pittsburgh) was fairly simple, as the Pottstown case will illustrate. Petersen had a steel-frame pipe-casting building containing a bridge crane that worked on rails extending through an open end about 60 ft out into a yard. The building's other three sides were covered with corrugated metal. A lean-to on one side contained concrete-mixing equipment. A shed alongside the outdoor craneway housed vacuum pumping equipment, which continues to be used for the company's regular pipe-manufacturing operations.

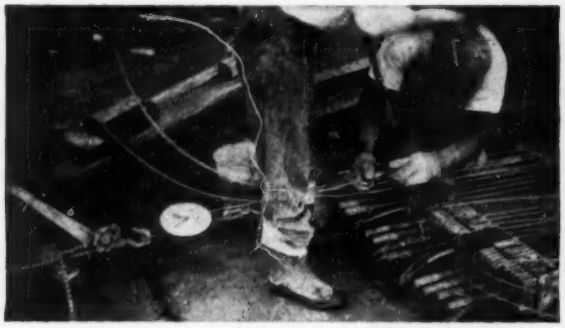
Just inside the craneway's supports, next to the vacuum shed, the company built three parallel casting beds, 36 in. wide and about 126 ft long, designed to take compression from pretensioning strands located eccentrically 1¼ in. and 3¼ in. above their top surface. The beds are buried except for about 7 in. projecting above grade.

Each long edge of a bed is a channel section. It is anchored into the bed, and it has threaded studs projecting horizontally, to engage side-forms for the prestressed beam.

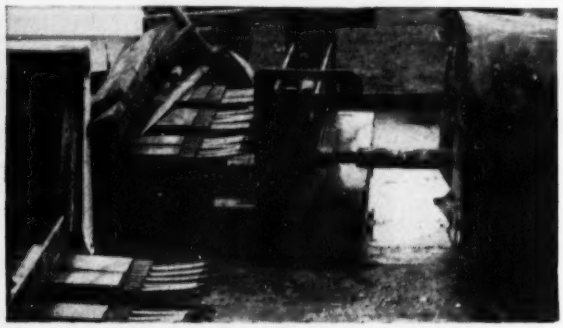
Casting-bed ends carry the fixed parts of pretensioning devices. The surface of the bed is grooved, to provide drainage channels for excess water in fresh concrete.

STRAND PLACEMENT BEGINS—Workman threads strand through holes in jack block and guide block, from which it will be carried to other end of casting bed.

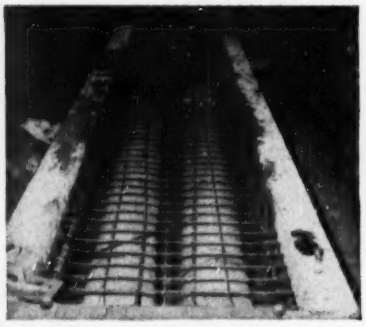
MAKING THE LOOP—After passing through second guide-block's hole, strand is picked up by small pulley, while workman carries strand back to the starting point for cutting.



TENSIONING BEGINS—Ratchet hoist with spring balance applies initial pull of 600 lb to upper half of loop as copper sleeve is crimped to strand, snug against jack block.



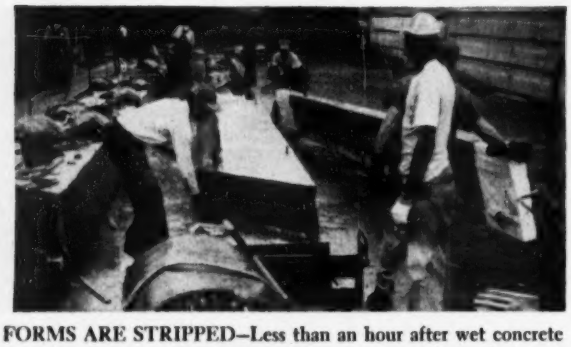
TENSION IS COMPLETE on strands in these two beds. Note 6¾-in. shims that hold jack positions; also shaft from track-mounted electric motor that turns jackscrews.



READY FOR CONCRETE—In place are stirrups and paper cylinders that form dead-weight-reducing cells in beams. (B. J. Baskin photo.)

REMOVING THE VACUUM—Workmen have detached vacuum lines from top mats, which aided vacuum side-forms to dry the concrete mix.

FRESH CONCRETE gets finishing touches before side and header forms are removed. Note dowel holes (foreground) for connection to bridge abutment.



FORMS ARE STRIPPED—Less than an hour after wet concrete was placed, beam is stiff enough to permit removal of side forms. Beam will remain on bed for three days.

SOON A BRIDGE—Beam rises from bed, to be loaded on a truck for delivery to bridge site. Muslin kept concrete from clogging drain grooves in bed. (ENR photos except as noted.)

• **Pretensioning devices**—Pretensioning is applied with loops of strand, so one end of the bed holds the middle of each loop; the other end of the bed holds the two ends. The first-named end has a bar, against which the loops bear, and a guide block. The guide block contains ¾-in. holes to receive strands at ¾-in. horizontal spacing 1¼ in. above the bed surface, and ¼-in. grooves on top at the same spacing, 3¼ in. above the bed. This bar and block assembly is fixed to the casting bed.

At the other end, where pretensioning is applied, there is a fixed guide block similar to the one just described. Special jacks hold the pretensioning strands and bear against the guide block. Each jack is a replica of a section of guide block, containing two jack screws. It is operated by an electric turning motor that is geared to turn both screws at the same time. This motor rides on a track at right angles with the casting-bed centerlines, so it can be brought quickly to position for operating any jack. Another pair of rails a few feet farther from the stressing ends of the beds, carries a strand-reel car. Movable equipment also includes vacuum forms and mats.

• **Procedure**—Factory output can run as high as 500 ft of prestressed beams in a week, with the present set-up. (Two or more beams can be cast on a bed at a time, a space of only 18 in. between beams being required.) That's allowing three days for curing and a day for preparation on each casting bed. Preparation consists of laying a strip of muslin over the bed surface; installing and tensioning the strands; setting stirrup steel and miscellaneous items; attaching forms; placing concrete; applying vacuum; and stripping (usually a half-hour after concrete is placed.)

The muslin keeps concrete out of casting-bed grooves and allows excess water to drain off.

Strand placement proceeds as follows: Strand is pulled off the reel and threaded through a lower hole in a jack block, then through a corresponding lower hole in the stressing-end guide block. The strand then is walked down to the other end of the bed, where it is threaded through the corresponding lower hole in the guide block. Caught on a snatch pulley, it is walked back to the starting point, laid in guide and jack-block grooves and cut. The procedure then begins for the next loop.

To prepare strands for tensioning, workmen crimp copper sleeves on the lower half of each loop, just outside the jack block. The sleeve bears against the block. Then a ratchet hoist is atached through a spring balance to the loop's upper half, which lies in grooves at three points: The two guide blocks and the jack block. The ratchet hoist applies a 600-lb pull to the strand loop, snugging it against the bar at the far end. Then another copper sleeve is crimped on the strand, to bear against the upper part of the jack block. The block at this point is tight against its guide block.

The strands now are ready for machine-tensioning. The electric motor turns each jack until its block has moved far enough away from the guide block to allow insertion of a 6¾-in. shim-block. At this block position the strand has 135,000 psi tension.

Stirrup steel is No. 2 & 5—3x8-in. wire mesh. There also are four longitudinal bars at the beam top. Four or eight inserts, with anchors, are provided for beam lifting. Two 2-in. sleeves are placed vertically near the ends, to engage dowels on bridge abutments, and one horizontal 2-in. sleeve is placed at mid-depth, at the beam center, to take a rod that ties the beam to an adjacent one. Paper tubes are used to form these sleeves. Larger paper tubes establish one or two longitudinal cellular spaces in each beam thus reducing dead weight. The spaces are 10¼, 12¼ or 24-in. dia, depending on beam depth.

Beam depth is 17 in. for clear spans up to 30 ft; 21 in. for clear spans up 38 ft.; and 33 in. for clear spans up to 50 ft, the maximum length produced. Beam width is 36 in. for all depths.

Side forms for any of the three beam depths are bolted flush with the outside of the casting bed. End forms, which can be made up for any skew, are set between the side forms at any position, depending on the length of beam required, and bolted to the side forms. Both side and end forms apply vacuum to the formed surfaces, the forms being hollow, with perforations on the concrete side and vacuum connections on the outer side. A textile form liner acts as a filter, keeping cement and aggregates in the forms as water is drawn off.

Concrete is poured from a bucket

Pennsylvania highway engineer tells how prestressing has grown on state jobs

In a letter to ENGINEERING NEWS-RECORD, C. H. Buckius, chief engineer of the Pennsylvania State Highway Department, comments on the state's experience in adopting precast, then precast-prestressed bridge construction:

"At the time precast bridge members were being considered for use, it was thought prudent first to develop the quality of the concrete for such members. Extensive tests were made and an excellent concrete was produced.

"The design of a precast member was next decided. Several members were made and test-loaded; then one member was subjected to tests.

"Tests took nearly a year. They proved the design and concrete to be excellent. Therefore, one experimental bridge deck was placed in 1947, and at the end of one year's excellent service record, the design was approved as satisfactory for Department use. This approval date was June, 1948.

"Following the installation of several bridges, and in order to provide for longer spans than could be economically placed by the precast deck design, the prestressed design was developed.

"In July, 1950, a loading test was conducted on one 30-ft member, the concrete in this 3-ft-wide member having an age of only ten days. The test proved conclusively that this type of construction is superior to the precast member.

"The record of installations of these types of bridge decks as used by the Department is as follows:

1947..... 1 precast
1948..... 7 precast
1949.....12 precast
1950.....10 precast*
1951.....24 precast;
16 precast-prestressed
1952 (to Oct.) ... 4 precast;
31 precast-prestressed

(* This is the year that substitution of prestressed concrete was allowed in contracts for precast bridges.)

"The primary reasons for the use of such decks were the availability of all materials required; the price and long procurement time of steel; the price of lumber for forms and a general scarcity of carpenters; the time element required for poured-in-place construction, compared to a complete installation time of about three hours; and equivalent of lower cost than a poured-in-place deck.

"In view of the excellent results obtained from these installations . . . we feel that this type of construction is in its infancy, and will be incorporated in many new structure designs."

that is handled by the overhead crane. Water-cement ratio at time of pouring is about six gallons per sack. Purpose of this mix is to assure full concrete contact with pretensioned strands.

As soon as the concrete is in place, vacuum mats are placed on the top and the vacuum pumps go into action. In a half-hour or so, about 35% of the original water has been removed, reducing the water-cement ratio to four gallons per sack. This is stiff enough to allow immediate stripping of side forms. Concrete finishers trowel up any rough spots; then the beam is covered with burlap and kept wet for three days.

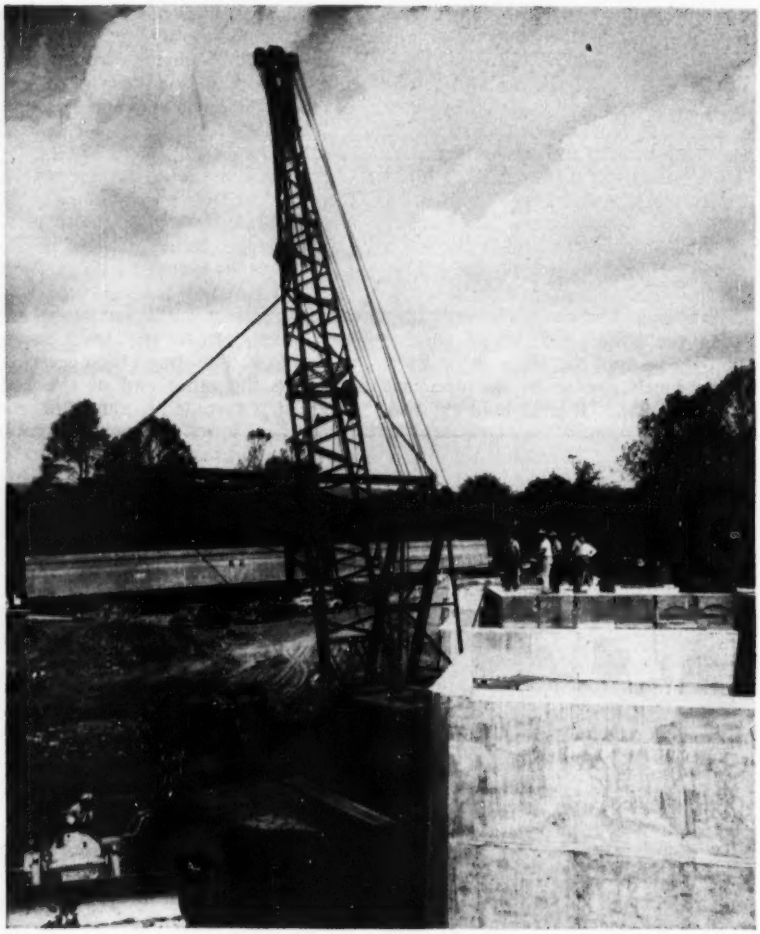
At the end of three days prestress wires are burned off. The beam instantly assumes a noticeable camber on the bed. Now it is ready for stockpiling.

• **At-site bridge work**—Beams go by truck or railroad flat car to bridge sites, where installation can take place in a hurry. If an old bridge is to be widened its abutments can be enlarged while traffic is maintained. Then, when the units are delivered, the old bridge can be wrecked, its old abutments pointed up, and the units placed side-by-side in a matter of hours. One small bridge was in place 28 minutes after the first beam was lifted off a truck by the crane. Finishing work, like guard-rail construction, can proceed and traffic is permitted immediately on the bridge.

• **Gleniron bridge**—Biggest job so far is a five-span structure on new abutments at Gleniron, Pa. Having a 27-ft out-to-out width, each span is made up of nine 33-in. deep units, 53 ft long (50-ft clear span). Twenty-ton units were loaded two to a flat car or one on a truck at the Pottstown plant and shipped to Gleniron. Each unit was transferred to two pneumatic tired dollies and towed to a position on the streambed alongside the abutments. A crawler crane in the streambed placed each unit. Only six men were needed for erection.

Units fit side-by-side with a maximum of ½ in. variation from flush contact. Transverse tie bolts are a series of threaded rods screwed into she-bolts at interior joints and snugged up with regular nuts on the outside. She-bolts and nuts fit into recesses in the beam sides. At the top of each joint there is a keyed slot, ¾ in. and 1½ in. wide, which is dry-packed as soon as the units are in place. The beam-tops make an adequate concrete roadway.

• **Concrete strength**—During beam manufacture, standard 6-in. cylinder samples of the wet concrete are made in a special vacuum mold, which pulls the water out much the same as the beam forms do. Cylinders made in this manner regularly show 3-day strengths of 3,300 psi or better and 28-day strengths of 5,000 psi or better. Air-entraining cement is used in the concrete mix.



GLENIRON BRIDGE—Biggest Concrete Products Co. bridge yet is five-span structure at Gleniron, Pa. Each span has nine 3-ft-wide units, 53 ft long, yielding a clear span of 50 ft. Tractor tows dolly-mounted deck unit to site.

• **Test beam**—The original test beam, now two pieces, is lying in the Concrete Products yard at Pottstown. Inspection shows that the strands have developed no tendency to slip inward, so the bond between concrete and strand evidently still is good. Each of the halves has a camber, which it assumed when the beam finally was broken. The load that broke the 17-in. deep, 30-ft beam (29 ft between supports) was 75,000 lb—almost 3½ times the design load of 23,000 lb. At the design loading, deflection was 5/16 in. Deflection at a loading of 50,500 lb was ½ in. The first crack appeared at 34,000 lb, at the center. At 48,000 lb, a second crack appeared 3 ft away from the center. At 62,365 lb the center crack was 0.01 in. wide.

In another test, a 30-ft conventional reinforced concrete beam 16 in. deep was loaded alongside a 30-ft prestressed beam 17 in. deep. The former, which contained five times as much steel as the latter did, failed at 43,000 lb loading. The latter failed at 75,000 lb. The former showed its first crack at 12,000 lb, about half of the design load.

Currently, exhaustive strain-gage tests on a Concrete Products Co. prestressed beam are being conducted at Lehigh University, Bethlehem, Pa. Standard H-20, S-16 loadings are being applied to the beam at one-second frequency.

Already more than a million repetitions have been made. The beam shows no appreciable permanent deflection, after 1,000,000 cycles, and no slip of pretensioned cables has been observed. Any cracks that appear are closed on removal of load from the prestressed bridge unit.

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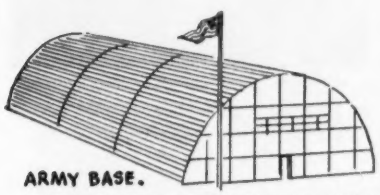
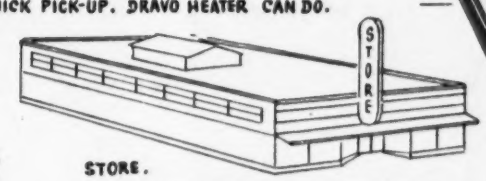
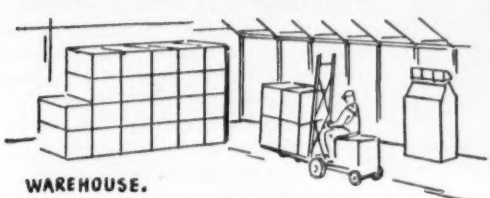


ARMY BASE.
WINTER CONSTRUCTION ON THESE BARRACKS. CAN INSTALL DRAVO HEATERS EARLY FOR HEAT DURING CONSTRUCTION AND AFTER COMPLETION.



STORE.
WITH DRAVO HEATERS, CAN USE ONE SET OF DUCTS FOR HEATING AND AIR-CONDITIONING.



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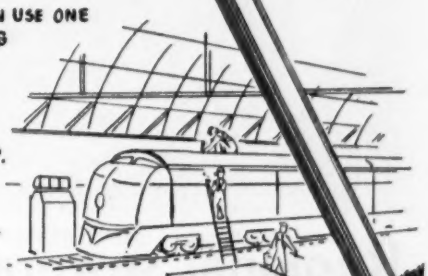

DIESEL RAILROAD SHOP.
NEEDS HEAT AT WORKING LEVEL.
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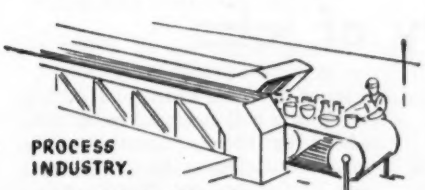
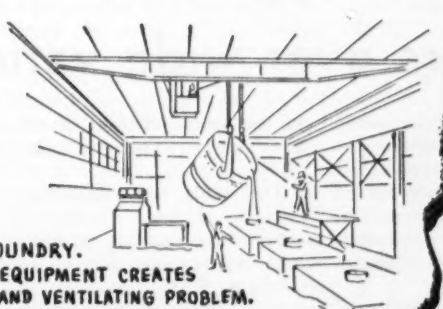


PROCESS INDUSTRY.
CURING AND DRYING.
SPECIFY DRAVO HERE.



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EXHAUST EQUIPMENT CREATES HEATING AND VENTILATING PROBLEM.
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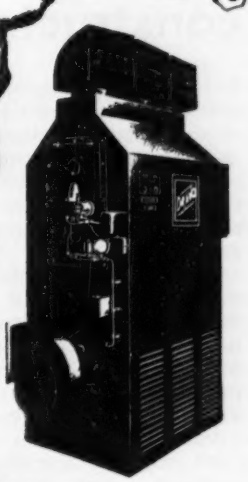

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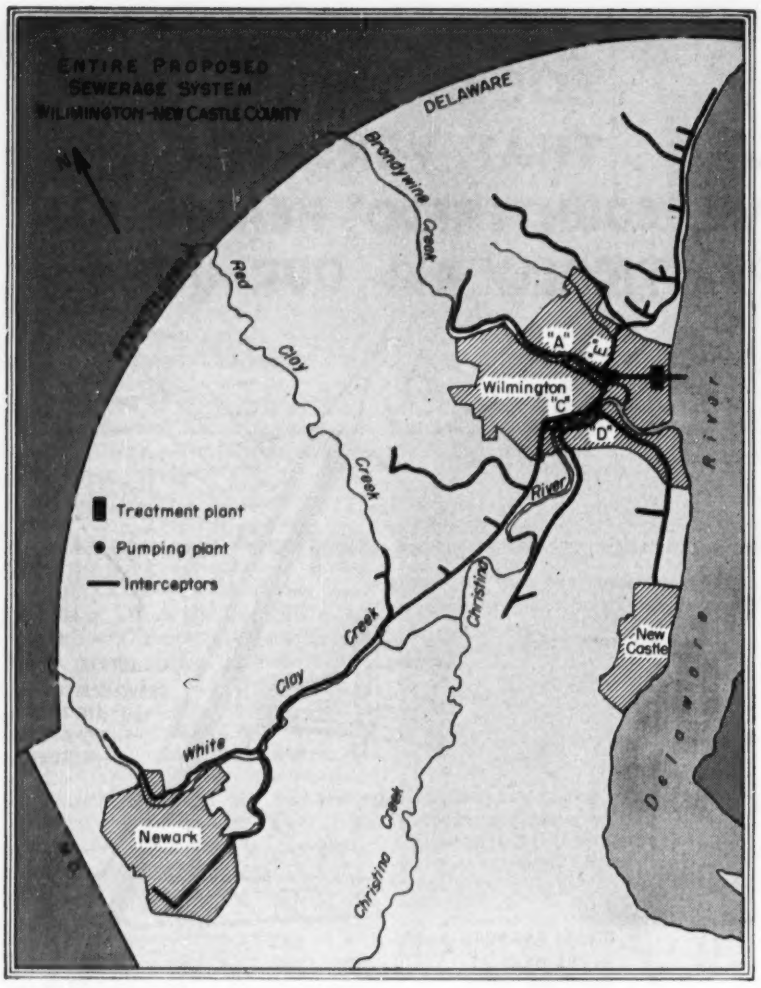
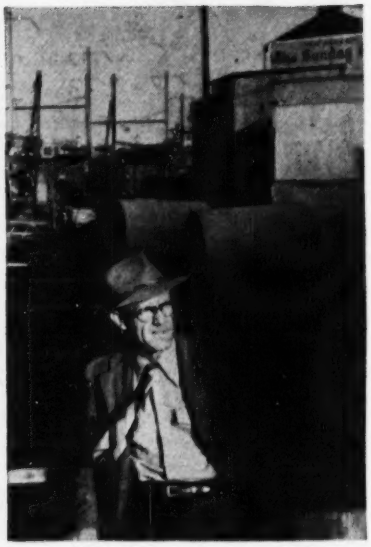




J. V. JOHNSON, resident engineer, has a lot of bases to cover in his on-the-job coordination of a far-flung project.

NORTHERN DELAWARE, with two-thirds the state's population and half its industry, will be drained by 50 miles of sewer in a regional interceptor system. County sewer lines will pass through meter houses where they join city interceptors. County will pay city for treatment.

Regional sewerage project spreads constructors over wide variety of jobs

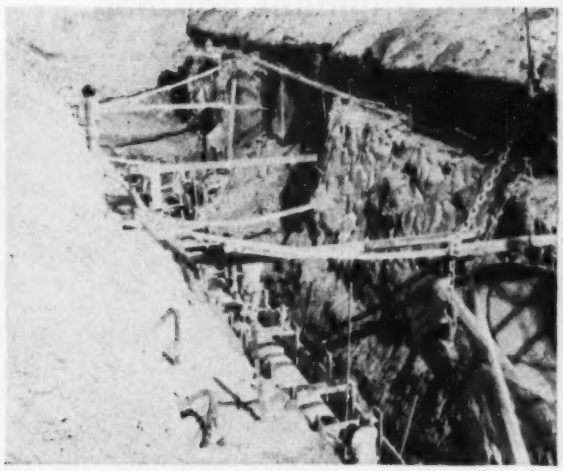
A $14.5-MILLION interceptor sewer system to serve two-thirds of the people of the State of Delaware and nearly half its industry is now midway toward completion. This Wilmington-New Castle County project exemplifies what cooperative city-county effort can produce.

Over 50 miles of collectors are involved. Extremities of the system stretch to within a mile of the Maryland line at Newark on the south, and within two miles of Pennsylvania on the north. Four miles of clay pipe, five miles of asbestos-cement and 15 miles of concrete will carry wastes (40% industrial) to a 40-mgd primary treatment plant in Wilmington. Christina River and its major tributary, Brandywine Creek, as well as several lesser streams, will be unloaded of the gross pollution of raw wastes they now pour into the Delaware.

• **Two birds, one stone**—New Castle County, although smallest of Delaware's three counties, is still a sizable area (437 sq mi) drained mostly by Christina River. It was realized early that treatment of Wilmington sewage and industrial wastes would be to little avail if the pollution of a fairly industrialized county continued to flow through the city to the Delaware. Complete cleanup would have to be a basin-wide operation; and this in turn, meant interagency effort.

Whitman, Requardt & Associates reported in 1947 on Wilmington's best means of collecting and treating its 29 mgd of untreated sewage and industrial wastes. The city had been put under order of the State Board of Health to correct the pollution and meet standards of the Interstate Commission on the Delaware River Basin (Incodel). And in 1949 the same Baltimore consulting firm went to work for the rest of New Castle County. Studies resulted in the combined project under way today.

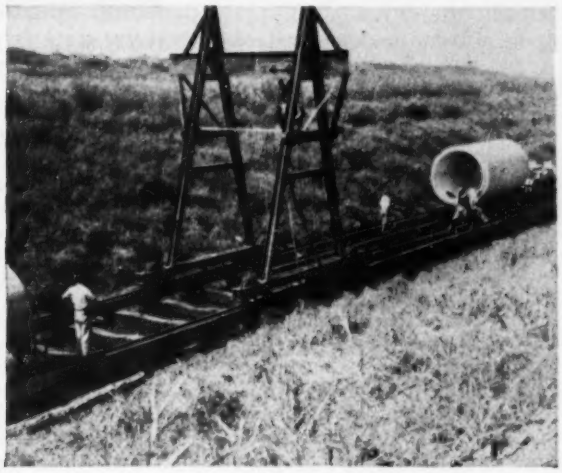
Chief Engineer E. F. Koester reviews all city work for the Street and Sewer Department; County Engineer John Taylor for the Levy Court of New Castle County. On paper, the consultants have two separate assignments. But as it works out, they have been able to design a unified regional project; they are coordinating the letting of contracts; and their resident engineer, J. V. Johnson, and his staff are supervising all construction on the



30-FT DEEP CUTS across country cow pastures.

LINER-PLATE TUNNELS under busy city streets.

TIGHT-SHEETED TRENCHES deep in unstable soil.



PILE -SUPPORTED OUTFALL on a dredge fill marsh.

far-flung and variformed project—aiming at completion in fall, 1954.

• **Variety is the spice**—For an idea of just how varied construction operations are on this job, and how much ground must be covered in supervising them, consider this "typical" day's work done recently by Resident Engineer Johnson:

Only his efficient secretary beat Johnson to the Whitman, Requardt field office that morning. But plenty of others checked in right behind him; and his day got off to a busy start.

J. B. Sites, who is chief inspector "down in the county," reported in with a question or two to be answered before making a 15-mile trip to his work. A survey party chief with some lacking ground control got his directions for the day. And a whole survey party arrived with the age-old problem of lost-strayed-or-stolen stakes, voiding the work they had done the day before.

This one justified Johnson's prompt personal attention, so it was off to the residential site of an FHA housing project, where surveying for interceptor E had been done amidst earthmoving and ditch digging activity the previous day. Points of connection—clay laterals to concrete collector—were finally found. No guilt for their loss was established.

• **Radio-phone calling**—Back at his car, Johnson's radio-telephone was calling him. His man on some repaving right under Wilmington's major Pennsylvania Railroad Station had a problem of finished grade. The 72-in. interceptor C was already laid there.

While street levels were checked under the railroad overpass, Johnson took a run down Front Street to check some of the toughest digging of all: The 72-in. concrete collector being laid there is going between stoutly braced, tight sheeting—sheeting that must remain in place if the unstable soil it retains is not to shift dangerously toward the trench after backfilling.

Movements that have taken place in this treacherous soil (despite expensive sheeting that went over estimates) are evidenced in one spot where 80 ft from the trench a wide crack opened in the pavement along a building line. Johnson describes soil in this area as "cream cheese when it's wet."

And excavation of the soil itself is further complicated by what's buried in it. More timber than dirt comes out of some sections. Old boats, structures and wood pipe—not wood-stave pipe, but actually hollowed-out logs, sound as the day they were buried.

Designers had to improvise contracted sections to worm through the maze of subsurface obstacles, still keeping to grade and picking up existing old collectors through this downtown section.

Utilities companies and three railroads are added to the long list of contractors among whom Resident Engi-

City-county sewer job keeps resident engineer hopping

neer Johnson must act as liaison man.

The city's old sewers carry storm water as well as sewage. So the interceptors had to be designed accordingly. The entire interceptor system has 190 mgd total collective capacity. And it is designed with overflow devices strategically placed so that at the peak of heavy runoff excessive flows will be diverted overboard into the Christina, Brandywine or Delaware, carrying a highly diluted untreated sewage.

One of these relief structures for escape of storm water is going into Front Street to tie into an existing outfall to the Christina.

• Plenty of tunneling—From Front Street Johnson had only a few blocks to go to check progress on an 80-ft liner-plate tunnel under Christina Avenue. Heavy galvanized plate was being placed as mucking got started on a bore that will carry 72-in. concrete pipe.

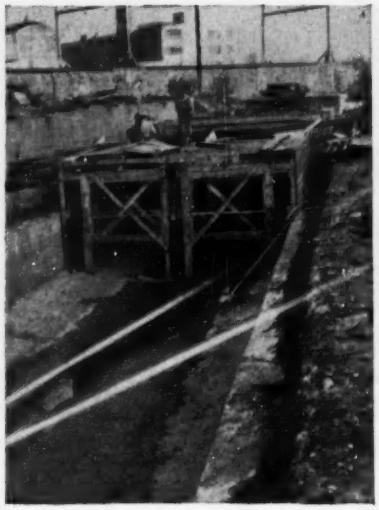
Twenty-three tunnels in all are being resorted to in an effort to avoid disrupting city street and rail traffic. One of these is interesting in that the finished section is built up by guniting to desired diameter directly on liner plates. This was a case where limited cover prevented use of as large a diameter liner plate as would have been required to accommodate a precast pipe of the diameter specified, explained Johnson.

Within sight of the Christina Ave. tunnel was work in preparation for a two-barreled inverted-siphon crossing the Christina River. Two cast-iron lines will be used.

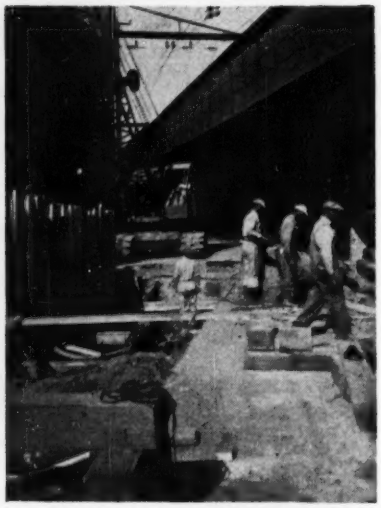
It was just a short ride to where the upstream end of interceptor C reached into an industrial area along the Christina. On this part of the job, a portion of old concrete flume that has for years led foul industrial wastes to the river is now being gunited to a smooth new surface and covered with a concrete slab. The closed conduit thus formed will become an integral part of interceptor C; and another relief chamber will divert flows in times of heavy storms through a rebuilt outfall flume to the river.

By this time it was 11 a.m. and nearly train time for T. W. Hacker's arrival from Baltimore. Hacker is Whitman, Requardt's construction engineer, working on this job directly with Project Engineer Roy Ritter. (Both Hacker and Ritter are partners in the firm.)

While waiting for the train, Johnson told the story of the dog that swam the Christina to come out the other side bald, so badly is the stream polluted with a concoction local tanneries use to take hair off goat skins.



OPEN SLUICES REBUILT and covered to carry industrial wastes.



CRAMPED DOWNTOWN DIGGING through buried "bodies" of the past.

Ted Hacker came to Wilmington for an 11:30 a.m. conference with the State Board of Health—and a full afternoon of business with Johnson and contractors on the outfall sewer.

After the conference they headed to Cherry Island Marsh, site of the project's treatment plant and outfall. This broad expanse of wasteland is a man-made product of Corps of Engineer hopper-dredge operations on the Delaware. For years the dredges pumped out their hoppers here to build up some 1.5 sq mi of new land. On this marsh, the 84-in. force main to the treatment plant, and the equal sized outfall from it, are now being laid. And excavation is proceeding for the plant itself.

• Conference in the field—Johnson and Hacker had some problems to settle on the marsh. Utilities Construction Co. has contracted to lay the outfall inland from a point on the levee at the Delaware shore. The Leo Butler Co. is already dredging off shore in preparation for the 35-ft deep submerged outfall. The two contractors needed clarification on where their two jobs met; and coordination was needed to keep the levee intact to prevent flooding, until digging in the marsh could be completed.

The marsh is treacherous enough without being flooded. Draglines digging to outfall grade have to open a ditch with about 1 on 4 side slopes to keep the highly unstable fill from sloughing right back onto the work. A bad slide greeted Johnson this day —a movement of the soggy marsh that would give the two draglines a good two week's extra work. But fortunately, it had happened right where they were working, well ahead of the pipe-laying operation.

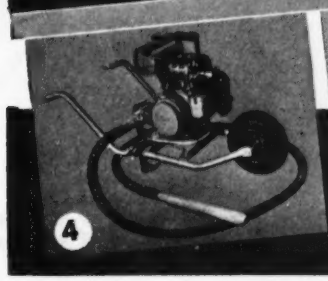
Some 5,500 ft of force main had been laid, about abreast of the point where it will branch at right angles into the treatment plant. (Here again a diversion structure is capable of shunting storm flow to the river.)

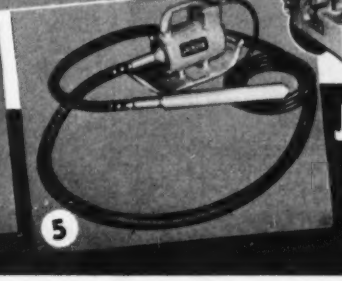
Treatment is to be grit removal and settling in two 20-mgd clarifiers, with elutriation followed by primary and secondary digestion of sludge. It is expected this primary treatment will remove the 55% of suspended solids and 35% of BOD required by Incodel. Dilution in the river will average 300 to 1 with the plant treating 40 mgd and should never go below 40 to 1. Elutriation in this sewage works will not be in preparation for vacuum filtering, for sludge will go to basins in the remote marsh for disposal. Rather, elutriation will be chiefly an attempt to "wash out" chromium and other toxic wastes before digestion.

Johnson took time to check progress on the force main while Hacker conferred with Gordon and Leonard Bautz of Utilities Construction Co. All was well. The pile-driving rig was taking a breather to let pipe-laying catch up. Three-pile bents spaced each 5 ft. 4 in. are capped to carry the 2,409-lb-per ft concrete pipe. Driven 40 to 45 ft, each timber pile is figured for 10 tons. With nine piles per pipe length at $1.65 per ft, pile caps costing $33 each, and the pipe itself $94.25 per ft including excavation and backfill, it's a fairly costly outfall—total: $139.88 per lf.

(*Continued on page 45*)

6 JACKSON MONEY-MAKERS for '53





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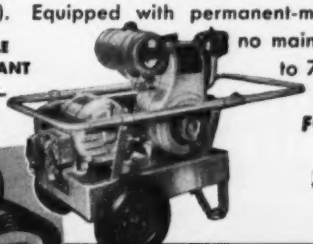

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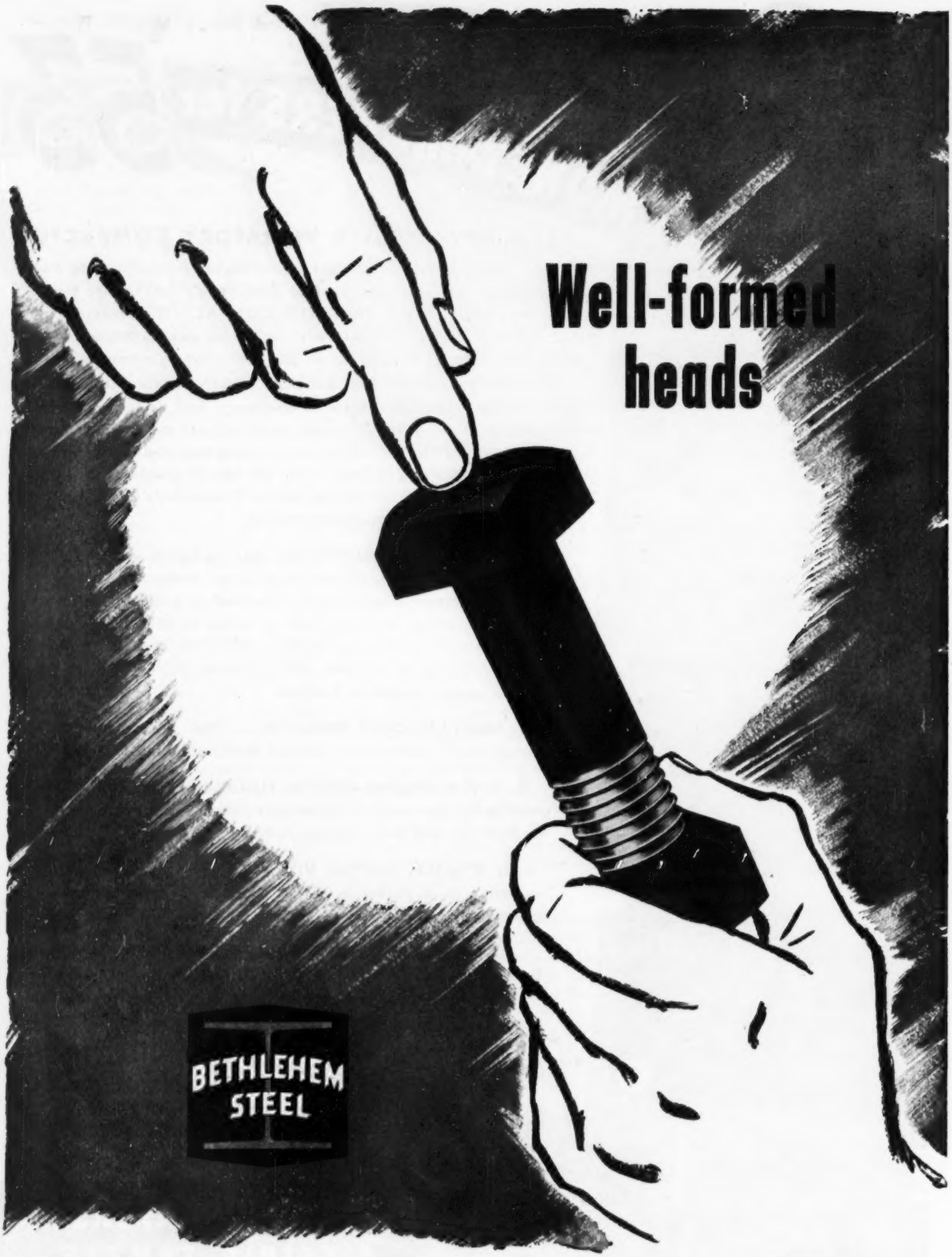


Bethlehem supplies every type of Fastener

TRACK-RIDING TRACTOR, hauling pipe, has channels on treads to hold rail.

Stopping off at the field office on his way past gave him opportunity for a glimpse of work at the system's major pumping station. It's practically across the street. This structure on the north bank of Brandywine Creek is the only pump installation inside the city. (There are 3 smaller stations out in the county.) Being built to push flows from 25 to 165 mgd through the 6,000-ft force main to Cherry Island Marsh, the plant is now nearly 80% completed. Flows below 25 mgd will be handled intermittently. Provision is made for flushing the twin 54-in. inverted siphon crossing of Brandywine Creek with creek water, if storm flows become too infrequent. Screens to protect equipment at the pumping station do away with need for screening at the treatment plant.

(On completion of this city pumping station, city interceptors will go into service and wastes now polluting the Christina and Brandywine will be pumped past the treatment plant, to the Delaware. Thus, the two streams flowing through the city will be cleaned up appreciably a full year ahead of anticipated March, 1954, completion of the treatment works.)

It was a 30-minute ride down into the county to Newark, where 24-in., class 2 asbestos-cement pipe is being buried in an excavation 30 ft deep. Johnson found single-stage wellpoints working to keep the digging dry. The 1-cu yd dragline of Ahl Brothers Construction Co. was scooping out sandy soil with just enough clay in it to make possible a cut with nearly vertical sides.

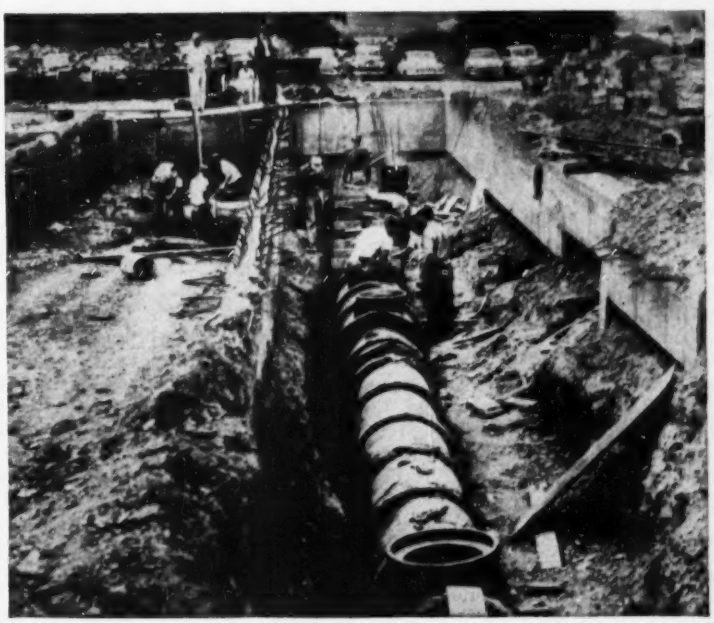
This work was only half a mile below the start of Newark A interceptor, right near Newark's Chrysler Corp. plant. Chrysler is operating on a temporary septic tank now while awaiting completion of the line.

There wasn't time to look at any of the other four contracts in the county when Johnny Johnson wound up his work down in Newark. Pipe jacking operations under Highway No. 896 and pipe-laying on the Newark B line would have to wait awhile, unless demanding attention.

A phone call from his car told him nothing was up at the office that couldn't wait until tomorrow. It was just as well. He had covered 75 miles and done a day's work. And he had a ticket in his pocket for a fight that night up in Philly.

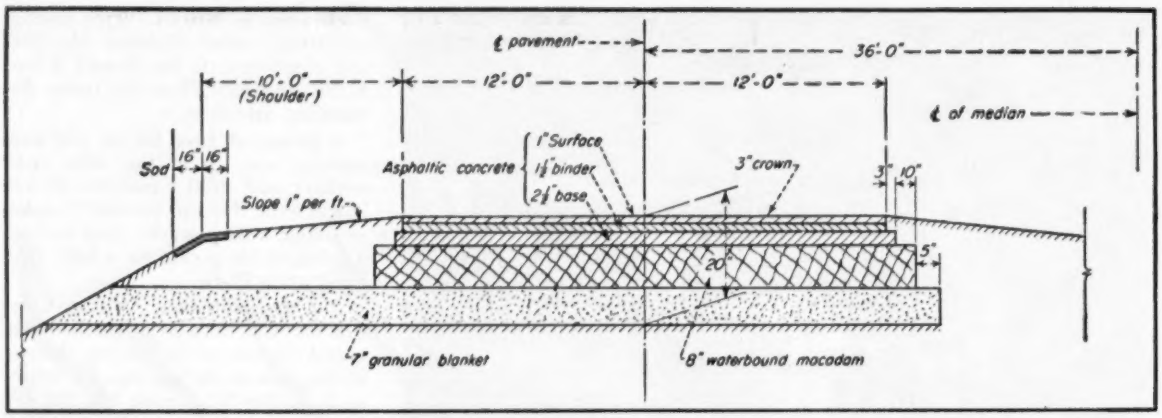
But the contractor, Utilities Construction Co., has a laying method that would appear to be saving dollars. Riding rails on the pile caps is a homemade gantry for placing the big 19-ton lengths of pipe. And to haul pipe to the site on a flange-wheeled flatcar, the contractor has a crawler tractor actually riding rails. Short pieces of channel-iron welded to tractor treads fall right over the rails, and the little gas-engined hauler hasn't jumped the track yet.

Johnson's office was calling again as he and Hacker went with the Bautz brothers to finish their business over a quick lunch. Inspector Sites wanted him out in the county, if he could make it during the afternoon.

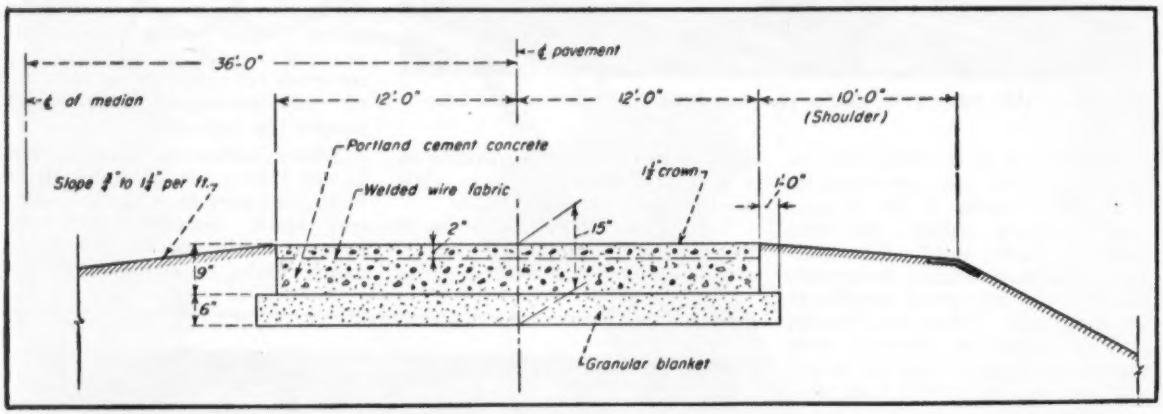


Clay pipe for air conditioning

Outstanding feature of the new service stations restaurants being built along the east and west extensions of the Pennsylvania Turnpike is the installation of complete air-conditioning and heating systems. Over 3,000 ft of clay pipe will be used in the new combination stations. Specified for the underground return air ducts, a total of 231 ft of clay pipe ranging from 8 in. to 30 in. in diameter, plus clay fittings, will be used in each building. Danforth Co., of Pittsburgh, Pa., is contractor for the units.



FLEXIBLE-TYPE pavement will be 5-in. of asphaltic concrete, 8-in. of waterbound macadam and 7-in. of granular material.



RIGID-TYPE pavement will be 9-in. of portland-cement concrete on a 6-in. blanket of granular material, to prevent pumping.

Indiana builds its own test pavements

THE RELATIVE MERITS of portland-cement concrete and asphaltic concrete in the construction of highway pavements is still a moot question in Indiana—as it is in several other states. Indiana, however, intends to obtain more factual data on this controversial problem.

The state isn't waiting for the results of the road test of the Western Association of State Highway Officials now under way in Idaho (ENR July 3, 1952, p. 36) or the one proposed by the American Association of State Highway Officials in Illinois (ENR Aug. 21, 1952, p. 26); both of which will study the effect of various wheel loads on pavements of different thicknesses. Instead, Indiana is going ahead with its own test project; with 50% financing by federal-aid funds.

The movement started four years ago when a four-man legislative committee was appointed to investigate Indiana's highways. It found that wartime overloads and the lack of maintenance under wartime conditions had done much damage to the highways. Moreover, increased traffic volumes and the fact that many of the older pavements were carrying wheel loads much heavier than those for which they were designed, were found to be contributing to the rapid deterioration of the system of highways.

• **Rigid versus flexible**—This focused attention on the operation of which type of pavement—a rigid type of portland-cement concrete or a flexible type of asphaltic concrete—is best suited to handle Indiana traffic, taking into consideration such factors as initial cost, durability, maintenance and length of service.

There were sharp differences of opinion, and powerful interests lined up on both sides of the question. When the state legislature assembled two years ago it enacted legislation designed to settle the argument, or at least to determine most of the answers.

• **Legislative mandate**—A legislative resolution made it mandatory for the state highway department to: "... conduct adequate and conclusive tests of both materials (asphaltic concrete and portland-cement concrete) under exactly similar circumstances . . . to undertake the experimentations as soon as practicable and report to the 1953 General Assembly on progress to date and exact findings as to durability, lasting qualities under heavy truck and auto traffic, as well as relative costs of initial application and general upkeep of each type of pavement."

This was a big order, but the state highway department engineers attacked it with determination.

• **Four-lane highway**—In selecting the site for the test project they chose one that also will constitute an improvement program. It is a 10.4-mile stretch of two-lane U.S. Highway 31—opposite Camp Atterbury, just north of Columbus, Ind.—which will be converted into a four-lane divided highway by the addition of the test pavements.

For two reasons, the new 24-ft wide test pavement won't be built as an independent unit paralleling the exist-

ing pavement. By incorporating sections of old pavement in both the northbound and southbound lanes (see location map) an improved alignment will be obtained.

Then by completing the 10.4 miles of four-lane divided highway with test sections of portland-cement concrete and asphaltic concrete, both types can be tested under northbound and southbound traffic.

The northern 5.1 miles of the 10.4-mile project will contain test sections of portland-cement concrete pavement. As shown in the accompanying sketch, there will be a total of 2.8 miles of this test pavement in the southbound lanes and 4.1 miles in the northbound lanes.

The southern 5.3 miles of the project will contain the test sections of asphaltic-concrete pavement. There will be 4.3 miles of this test pavement in the southbound lanes, and 2.3 miles in the northbound lanes.

• **Indianapolis-Columbus road**—The north end of the project will connect with a four-lane divided pavement leading to Indianapolis. The south end will connect to both the Columbus bypass (U.S. 31) and to the city route (U.S. 31A). Thus, when the test project is completed this year, motorists will have a four-lane divided highway for the entire 43 miles of U.S. 31 between the outskirts of Columbus and Indianapolis.

• **No second guessing**—In designing the two types of test pavements, the state highway department sought to avoid any second guessing by either the portland-cement or the asphalt industries.

Soil and traffic data for the north portion of the project were supplied to the Portland Cement Association; and similar data on the southern portion were submitted to the Asphalt Institute. Both were requested to suggest designs and specifications for the type of pavement in their fields.

As a result, the highway department was able to specify a portland-cement-concrete pavement and an asphaltic-concrete pavement believed to have equal load-carrying capacities.

• **Designed for 1960 traffic**—Both pavement designs were based on the 24-hr annual average traffic count for 1951, increased by 6% as an estimate of traffic in 1960. Both pavements were designed for like soil, traffic and load data.

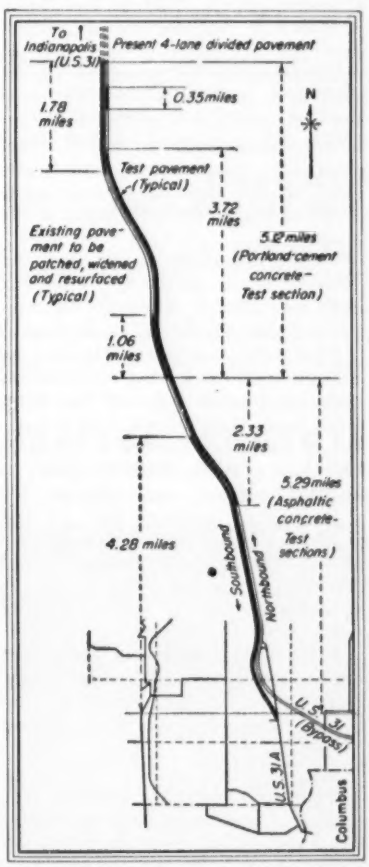
For these reasons, the highway engineers believe that this work will constitute a fair and equitable test of the pavement types, under the prevailing conditions of traffic, weather and other items peculiar to this locality.

Lack of space does not permit a detailed analysis of the design and construction specifications, but here are some of the main points that should be of interest.

• **Portland-cement concrete**—All areas of the subgrade extending one foot outside of the portland-cement concrete pavement will be compacted for a depth of at least 6 in., to not less than 95% of the maximum density as outlined in the AASHO Specifications, T99-49.

The pavement will be placed on a blanket of non-pumping, dense-graded granular material similar to Indiana's Subgrade Treatment Material Type II. This material has been used successfully in the state's highway subgrade construction for several years. About 60% of the blanket will be 6 in. thick and the remainder, 5 in. thick.

The pavement itself will be the highway department's standard air-entrained concrete, having an average modulus of rupture of 700 psi at 28 days. Expansion joints will be used only at fixed structures.



BOTH TYPES of pavement will be tested under northbound and southbound traffic. The completed project will provide nearly 10 miles of four-lane divided highway on U. S. 31, just north of Columbus, Ind.

• **Saw longitudinal joint**—Transverse contraction joints at 40-ft intervals will be formed in the fresh concrete, but the longitudinal joint at the centerline of pavement will be sawed to a depth of at least 2¼ in. Specifications require this sawing to be done within 30 days after removal of the curing agent, or before the road is opened to traffic.

Dowel bars for the expansion joints will be 1-in. round, 20 in. long and spaced 12 in. apart. Tie bars for longitudinal joints will be ½-in. deformed, 30 in. long and spaced 30 in. apart. Tie bars for transverse construction joints will be ⅝-in. deformed round, 36 in. long and will be spaced 12 in. apart.

Both types of tie bars and the dowels are shorter than customarily used by the Indiana State Highway Department.

The portland-cement-concrete slab will have a 9-in. uniform depth, with a 1½-in. bilateral crown. It will be reinforced with welded wire fabric, placed 2 in. below the pavement surface. The fabric will weigh 54 lb per 100 sq ft and will be made up of No. 2 longitudinal wires at 6-in. centers, and No. 4 transverse wires at 12-in. centers. Aggregates for the concrete will be obtained only from approved pits or quarries.

Shoulders along both types of pavement will be compacted to a depth of at least 9 in. and to at least 95% of maximum density (AASHO T99-49). The outside shoulder along the portland-cement-concrete pavement is to be constructed of a low volume-change soil having a plasticity index not to exceed 10.

All shoulders are to be mulched and seeded.

• **Asphaltic concrete**—As shown in an accompanying sketch, the flexible-type test section of pavement will have a nominal, composite thickness, of 20 in. It will be made up of 7 in. of open-graded granular material, 8 in. of waterbound macadam, and 5 in. of hot-mixed asphaltic concrete in the surface layer.

The permeable granular material, conforming to Indiana's Subgrade Treatment Material, Type I, will extend clear to the shoulder slope on the outside of the pavement, and to at least 6 in. outside of the waterbound macadam under the median strip of the divided highway. Both the subgrade and the granular material will be compacted to 100% density. Longitudinal 6-in. pipe drains will be used where transverse drainage is not feasible.

• **Single-course macadam**—The waterbound macadam, extending 10 in. be-

EARTH-CARRYING scrapers place selected material in roadway embankment at the Columbus end of project. Most of the grading work and rehabilitation of existing pavement were completed last year. The test pavements will be constructed this spring.

yond the base course of asphaltic concrete, is to be constructed in a single course, 8 in. thick.

Its construction, in general, will follow standard procedure, except that a self-propelled vibrating machine will be used to vibrate the "fines" into the voids of the coarse aggregate and to key the material together.

The asphaltic concrete, which is to be hot-mixed and hot-laid, will be placed in three layers; 2½-in. of base-course on top of the waterbound macadam, 1½-in. of binder, and 1-in. of surfacing. All three classes of asphaltic concrete will be the state highway department's standard mixes, each with a few minor exceptions.

• **Heavy pneumatic roller**—Each component part of the flexible pavement will receive additional rolling and testing with a heavy roller for load-carrying capacity as it is built. This includes the compacted earth subgrade, granular blanket and waterbound macadam, as well as the base, binder and surface courses of asphaltic concrete.

A four-wheel tandem, pneumatic-tired roller will be used, by making two passes over all areas being checked. It will be ballasted to give loads varying from 6,000 to 25,000 lb per wheel, with a maximum total weight of 50 tons. Inflation pressures of the tires, and the ballasted loads will be integrated to give a range of unit pressures under the tires, as required in making the tests.

• **Instrumentation?**—Just how much instrumentation will be incorporated in the construction of both types of test pavement has not been decided to date.

The first grading and drainage contract was awarded in July, 1950, with completion specified by July 1, 1951. It was not completed, however, until May 21, 1952. This delay in completing the grading, held up the project considerably but both paving contracts were awarded last summer.

• **Paving contractors**—The Bontrager Construction Co., Elkhart, Ind., holds a $751,450 contract for reconstruction and placement of the portland-cement-concrete test pavement on the northern 5.1 miles of the project. Reith-Riley Construction Co., Goshen, Ind., holds a $922,773 contract for reconstruction and placement of the asphaltic-concrete pavement on the southern 5.3 miles of the project.

Paving operations on the test sections were not started last year, but both contracts are scheduled for completion early in the fall of 1953.

The total contract costs are no indication of the relative construction costs of the two types of test pavement, since both include a great number of operations needed to rehabilitate those portions of old pavement to be left in place.

Bontrager's contract has 74 bid items, and Reith-Riley's has 79. Included in the rehabilitation of the old concrete pavement are: patching, widening to 24 ft, and resurfacing with asphaltic concrete.

Even a breakdown of those bid items directly connected with the two types of test pavement won't give an accurate comparison of their relative costs.

• **Estimated costs**—The closest estimates that can be made at this time—based on unit bid prices and estimated quantities—indicate that the portland-cement concrete will cost in the neighborhood of $5.00 per sq yd, compared with $5.50 per sq yd for the asphaltic concrete.

Part of this difference in costs can be attributed to the requirements of operating the 50-ton roller in testing and compacting the asphaltic-concrete pavement. The final costs, however, won't be ascertainable until construction has been completed and both final estimates have been made.

• **Design supervision**—Final designs for the test pavements were prepared under the supervision of Ray H. Bower, chief engineer of the Indiana State Highway Department. W. H. Behrens is engineer of road design; W. T. Spencer, soils engineer; and F. E. Havey, engineer of materials and tests.

"Slush plow" keeps frazil ice moving

A "slush plow," devised by Karl Powers of the Midvale Irrigation District in Wyoming, keeps water flowing all winter for hydro-electric power, in spite of heavy formations of frazil ice at head works of the Wyoming Canal. And use of the plow resulted in a saving of some $19,000 last winter.

Temperatures lower than −25 deg F cause slush ice, or frazil ice, to form in the fast-flowing Wind River. The granular ice forms on suspended drains of silt or sand. And then it is carried downstream by the fast current.

At Wind River Diversion Dam, where water is deflected into Wyoming Canal, there is the problem of slush ice piling up on the canal headworks, cutting off flow and causing flooding. For years this problem was solved by heroic efforts of men working around the clock for weeks in temperatures down to 50 below. Winds of 40 mph more than once knocked one of the 12 or 15-man crew into the frigid water as the fight to deflect slush into a log chute was fought. The work used to cost as much as $22,000 in a season.

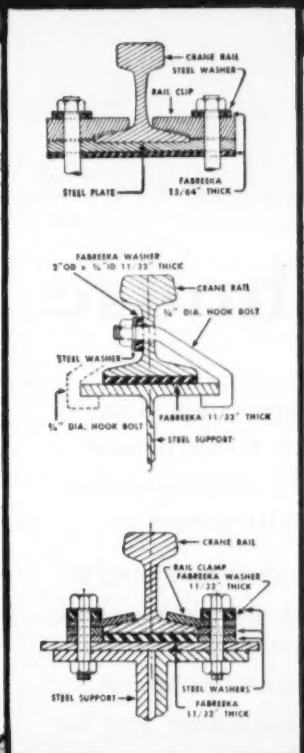
Powers' "slush plow" did the job of deflecting the frazil ice last winter for $3,134.

The device is an outboard motor hung from a steel frame spanning a cut in the surface ice. This cut is made across the flow of frazil ice and leading to the diversion dam's log chute. As many such motors as necessary are spaced along the cut. Their propeller action moves the slush to the chute very effectively.

Electric motors drive the propellers, and last winter the regular gate tender and one helper were able to keep the slush moving. They needed extra help for only one week. An illustrated article on the "slush plow" may be found in The Reclamation Era for December.

FABREEKA

Fabreeka Pads are used on this Traveling Bridge Crane to absorb impact shock and transmitted vibration.



Fabreeka Pads Reduce Maintenance Costs of Cranes,

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WIDELY USED — UNDER THE RAILS of Traveling Bridge Cranes and Overhead Cranes — Fabreeka Pads absorb impact shock and transmitted vibration . . . protect the entire crane structure and its foundations from the effects of these destructive forces.

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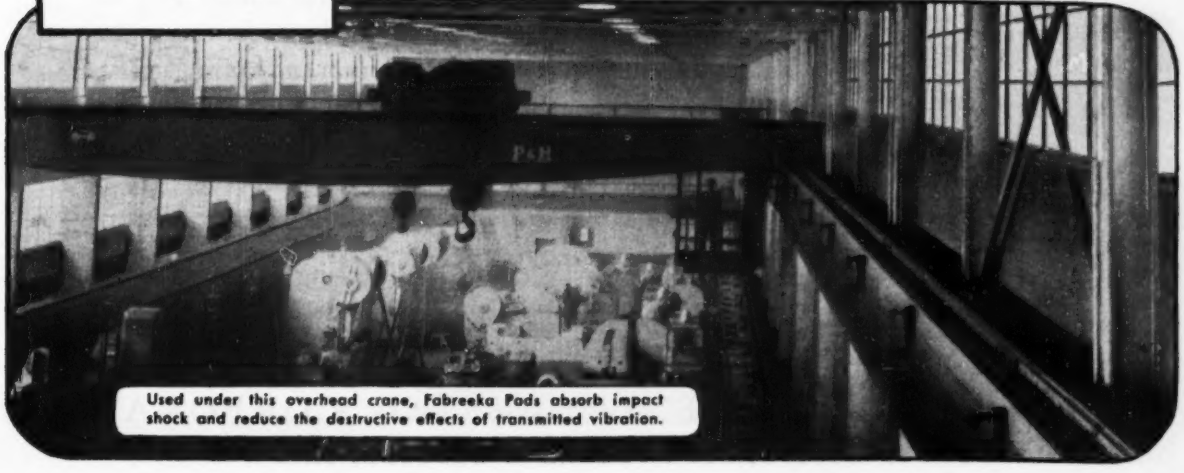
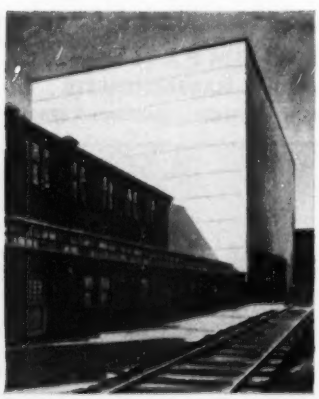


Used under this overhead crane, Fabreeka Pads absorb impact shock and reduce the destructive effects of transmitted vibration.

LOOKING AHEAD WITH Westinghouse

For Westinghouse Electric Corporation, Stone & Webster Engineering Corporation recently made a detailed study of 5 different plans for expansion of the client's electric generator manufacturing capacity.

The work included an independent review of the estimated growth in demand for generators (both hydro and steam) through 1970; determination of the probable maximum economical size of generators; a study of present manufacturing conditions and the capacity desired; a study of methods for increasing manufacturing facilities; description and examination of plans; method of operations under the recommended plan; and a step-by-step program of generator fabrication, with provision for temporary procedures to be followed while the expansion work is in progress.



First step in expansion of manufacturing facilities at Westinghouse Electric Corporation's plant, East Pittsburgh, Pennsylvania

Stone & Webster Engineering Corporation was subsequently retained to design and build the new facilities.

STONE & WEBSTER ENGINEERING CORPORATION

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$150-million expressway system proposed for Miami's traffic problem

Financing charges will bring estimated total cost to $224 million over a 30-year period.

Engineers of the Florida State Road Department have recommended an elevated expressway system as the only complete answer to the traffic and parking problem that is confronting Miami, Fla.

The system would cost an estimated $224 million (including interest), to be financed by a combination of tolls and taxes.

The recommendations are based on the findings of a two-and-a-half year traffic origination and destination survey of Greater Miami made by the department's engineers at a cost of $225,000.

• **Plan**—Details of the plan were presented to Miami city commissioners by Melvin A. Conner, chief of the SRD engineering and traffic planning division.

The main elements of the plan are as follows:

• Three six-lane, high-level expressways that would feed into the downtown Miami section from the north, west and southwest.

• An eight-lane, high-level distributor over the Florida East Coast Railway tracks through downtown Miami, a distance of 26 blocks.

• Elevated spurs leading from the distributor to parking garages.

• High-level bridges on the causeways linking Miami and Miami Beach across Biscayne Bay. These are planned to eliminate the frequent opening of drawbridges.

• A new causeway across the bay from Miami to Miami Beach.

• **Predictions**—Conner said that the system of elevated expressways and new bridges would free downtown streets of most through traffic. The survey had disclosed that an average of 100,000 motor vehicles entered the Miami central business district each day. Seven out of 10 of the vehicles merely are passing through.

Conner predicted that the system designed by the SRD engineers would take care of 48% of traffic generated in urban Greater Miami.

He also predicted that a coordinated system of traffic lights on the expressways would be regulated to allow speeds of 45 mph.

• **Costs and finance**—Total cost of construction was estimated at $150 million. Interest over 30 years would increase this to the estimated $224 million.

Here are the details of the financing plan:

• A 10-cent toll on the high-level bridge over the Miami River at the south end of the distributor would bring in $150 million during the 30 year financing period.

• A special downtown benefit tax district to be created that would yield $30 million.

• Dade County's share of the state 7-cent gasoline tax would yield $79 million.

• A special 1-cent Dade County gasoline tax to yield $90 million.

• A special motor vehicle license fee for Dade County would yield the balance needed, $17 million.

The plan has been taken under study by the Miami City Commission, the Dade County Commission, Chamber of Commerce, and organized groups of engineers and others interested in Miami's traffic and parking problem.

Bridge moved to prevent flooding out

San Diego County transfers five, 56-ft wood trusses fearing the end of a drought period.

The end of the drought in Southern California created a problem for the County of San Diego which found a bridge and a reservoir so close together that the bridge might possibly be flooded out.

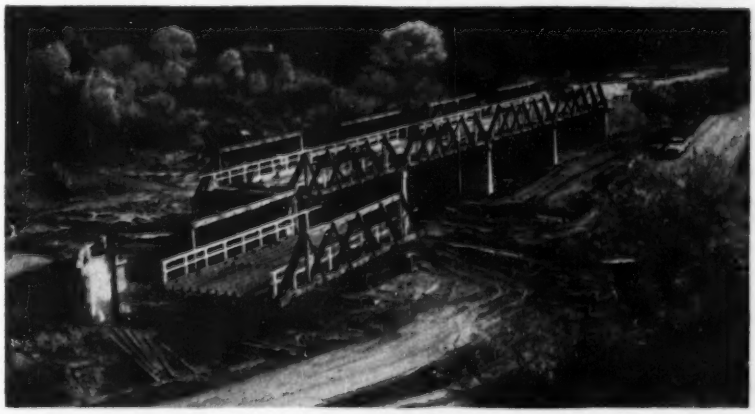
The five-span, wood-truss structure crosses the Sweetwater River near the mountain community of Alpine in the eastern part of San Diego County. It was built in 1944. Since that time the Southern California Water & Telephone Co. had the Loveland Reservoir constructed a short distance downstream on the Sweetwater River.

The county let a contract to E. S. and N. S. Johnson of Fullerton, to move the bridge a quarter of a mile upstream.

New concrete piers and approaches have been built and the 56-ft, wood-truss spans were moved to the new location with the aid of four cranes and flatbed trailers.

Traffic was detoured over the riverbed with a 36-in. culvert diverting the little water in the stream in early December. California W&T has agreed to reimburse the county for the cost of moving.

George K. Dale, chief operations engineer for the county road department devised the plan.



MOVING A BRIDGE by flatbed truck in San Diego County, Calif.

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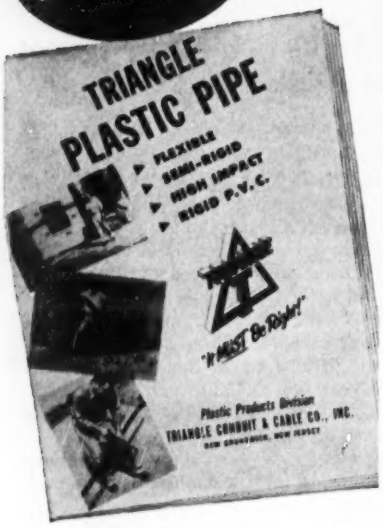

Here's a free brochure on Triangle Plastic Pipe. It contains all the most recent information on how Triangle's four types—Flexible, Semi-Rigid, Rigid High Impact and Rigid Polyvinyl Chloride—can help solve your piping problems.

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It Must Be Right

1,000-unit coast project delayed by FMA details

Construction of a 1,000-unit garden-type apartment project in San Diego, Calif., is expected to be started within a few weeks.

Webb & Knapp, Inc., New York real estate firm which is sponsoring the project, has applied for six FHA commitments under Title 9, Section 908—so-called programmed or defense housing—totaling $8 million.

William Zeckendorf, president of W&K, says he believes this is the largest Title 9, Section 908 group of commitments sought. A total of 9,000 defense housing commitments were allocated to the San Diego area, more than any other city in the U. S.

FHA thus far has approved the first of the six projects and has issued a commitment for 323 units totaling $2.25 million.

• **Delay**—Start of construction by Crevette Construction, Inc., a subsidiary of W&K, has been delayed because of technical difficulties with FHA. W&K obtained the allocation for the 1,000 rental units a year ago. However, the problem is this:

FHA can't commit for more than $5 million on a single project. Thus the 1,000-unit W&K Claremont Garden Apartment development had to be split up. The FHA regional office in San Diego is swamped with processing work under the allocation of 9,000 defense housing units plus two big Wherry Act projects and a heavy volume of straight FHA business. Thus it was able to process only one of W&K's six projects quickly. It will take another four or six months to get the others processed. Meantime W&K can't do the necessary land leveling on the first project without doing all of the site work. The first project involves creating land fill for the succeeding projects.

W&K has agreed to go forward with the site preparation on the succeeding projects with its own funds, in order to facilitate start on the first. However, FHA refuses to allow this because it involves the possibility of mechanics' liens against the land on the succeeding projects, prior to issuance of the commitments.

Negotiations are now under way to resolve this impasse.

• **Project**—The rental units will be 3½ and 4½-room apartments in 140 separate two-story garden-type buildings. FHA approved rentals are $73 and $82 for the units, plus $5 monthly for garage.

The buildings will be stucco, contemporary in design and landscaped. Utilities have been installed to the site. Abrams & Eschenback, of La Jolla, are the architects, and Freeland, Peterson & Everson, of San Diego, the engineers. The whole project overlooks Mission Bay.

Boston port development takes another step ahead

The third step in the Boston Port Authority's "Master Plan" of port terminal development (ENR Feb. 21, 1952, p. 32) began with demolition of Commonwealth Pier No. 1 and Boston & Albany Pier No. 2, on the East Boston waterfront to make way for a big new deep-water terminal.

The new terminal will cost $9.5 million. This includes purchase of the East Boston terminal of the Boston & Albany R.R. and modernization of the grain elevator and galleries, which has been completed. The terminal will accommodate three large cargo vessels at one time.

The new terminal will be 390 ft wide and 600 ft long and will have 25-ft working aprons plus rail tracks on the side berths, and a 20-ft working apron on the outboard end. The terminal will cover an area of about 196,000 sq ft. It will not have any columns, thus making for economical and efficient handling of cargo and cargo-moving equipment.

The side berths of the new terminal will have piping for the transfer of bulk liquid cargo from ship to tank car.

Two sets of rail tracks in depressed ways will enter the transit shed and ramps will permit access of the largest highway vehicles. In addition, tailboard height truck docks will be located at the inshore end for easier loading.

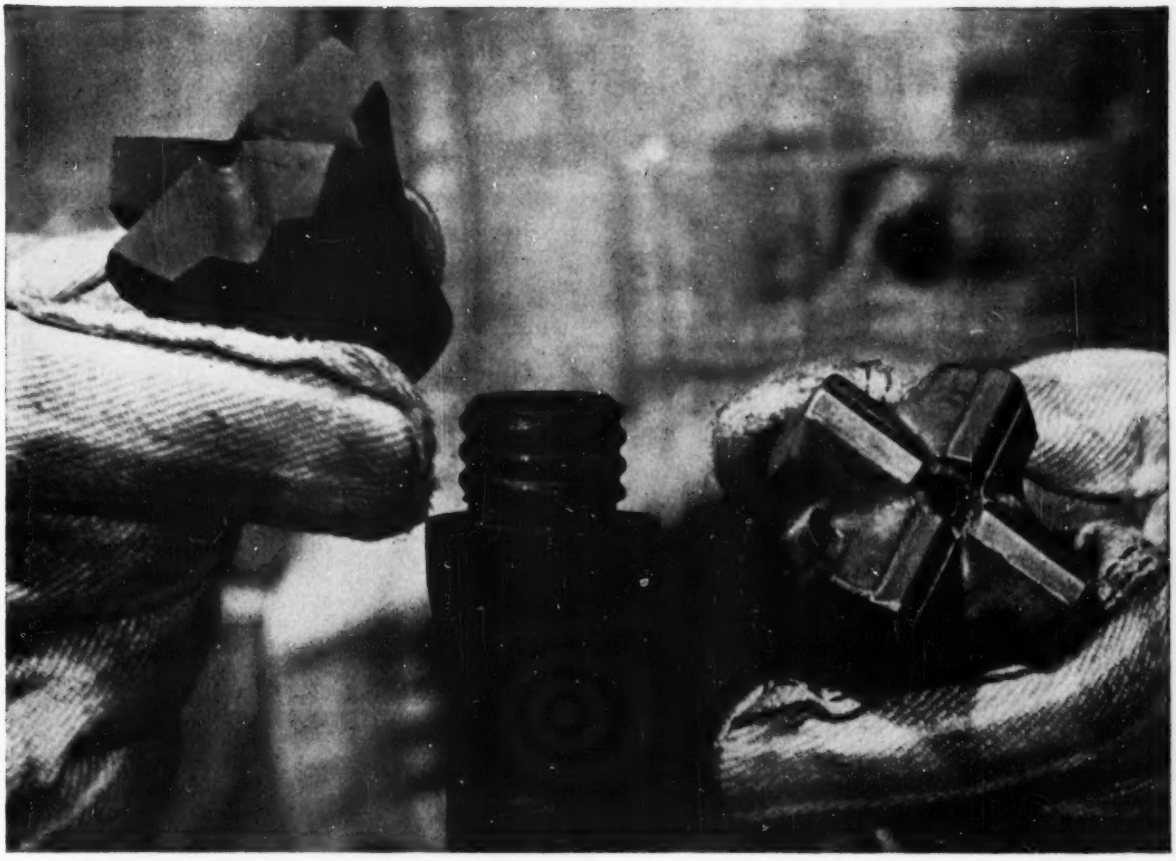
• **Fourth step**—Port Authority Director John M. Bresnahan said that the authority soon intends to take the fourth step of the program at Castle Island Terminal.

"At Castle Island," Bresnahan said, "we shall enlarge one transit shed and replace a temporary shed, replace piling, relocate trackage and roads and erect auxiliary buildings at a cost of $1.2 million. Castle Island has become one of the largest lumber handling terminals on the East Coast and these alterations are vital to both this and the general cargo trade."

It is estimated that three years will be required to finish the East Boston project.

("Municipal" *continued on p. 55*)

NO NEED TO SWITCH STEELS WHEN YOU NEED TO SWITCH BIT TYPES!



Both Timken® bit types fit the same steel!

YOU don't need to switch steels, or stock more than one kind, when you use Timken® interchangeable rock bits. Timken multi-use and carbide insert bits both fit the same threaded drill steel so that you can change quickly to the most economical bit as the ground changes. And you can do it right on the job!

In ordinary ground, when full increments of steel can be drilled, Timken multi-use bits, with correct and controlled reconditioning, will give you the lowest cost per foot of hole.

If you hit hard and abrasive ground, you can switch quickly to Timken carbide insert bits. They're your best bet for maximum speed drilling, constant-gage holes, small diameter blast holes and very deep holes.

Be sure to have both types of Timken bits on hand and you'll have the best answer to every one of your drilling problems.

Timken multi-use and carbide insert bits are interchangeable in each thread series. And both types have these three important advantages: (1) made from electric furnace Timken fine alloy steel, (2) threads are not subject to drilling impact because of the special shoulder union developed by the Timken Company, (3) quickly and easily changed.

Timken rock bit engineers have 20 years' experience in solving drilling problems. Let them help you select the best bits for *your* job. Write The Timken Roller Bearing Company, Rock Bit Division, Canton 6, Ohio. Cable address: "TIMROSCO".

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your best bet for the best bit
. . . for <u>every</u> job

What's U. S. Rubber doing to build the world's largest man-made beach?

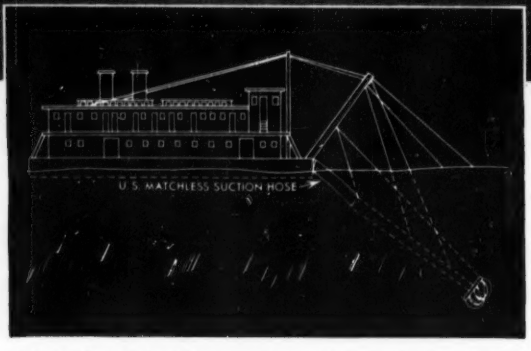

Photo shows dredge pumping sand to make the artificial beach on the Mississippi shore. It extends approximately 1500 feet into the stream. The diagram shows the cutter head which stirs up sand and silt. This in turn is drawn through the pipe, then through the U.S. Matchless Suction Hose to the pump and through the discharge line.

The dredge which has thus far sucked out over 6 million cubic yards of sand to build the 26-mile long beach from Henderson Point, Miss., to Biloxi, Miss., is equipped with U.S. Matchless® Hose. This tremendous job also includes the pumping of an additional 6 million cubic yards of river silt, sand and mud through this same hose. The sloping bathing beach, when finished, will also provide a defense for the sea wall in abnormally high tides. The "U.S." Hose, acting as a flexible connection between the cutter head and the dredge, is still in good condition and has plenty of service life left, despite its rugged treatment. No matter what your hose problem may be, consult United States Rubber Company.

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UNITED STATES RUBBER COMPANY

MECHANICAL GOODS DIVISION · ROCKEFELLER CENTER, NEW YORK 20, N. Y.

United Fruit opens new banana wharf

New Orleans wharf follows the inception of the Weehawken pier as a completely mechanized unit

A new $1-million wharf to speed the handling of bananas from ship to shoreside distribution facilities was placed in operation in New Orleans two weeks ago.

This is the second such banana terminal to be opened within a year by the United Fruit Co. The other is located at Weehawken, N. J. Both were developed by United Fruit engineers, and both are furnished with new equipment to reduce loss and damage to fruit.

The new terminal was built by the Board of Commissioners of the Port of New Orleans on the Erata Street Wharf. The terminal is part of the $30-million port expansion program now under way (ENR Oct. 9, 1952, p. 60).

• **New wharf**—Construction work included piling, a concrete apron along the bank of the Mississippi River and a wharf deck 350 ft in length and 93 ft wide. A shed covers this area and extends inshore for 392 ft.

On the deck, four electrically operated gantry cranes lower moving pocket belts into the holds of the banana ships. From the rear of the gantry cranes bananas roll, without being touched by human hands, onto the rubber beds of moving belts. As at Weehawken, the New Orleans installation will have a capacity of 8,000 stems per hour.

There are four of these belts moving up and down and around corners to load fruit into boxcars and trucks. Their total length is 5,220 ft. Each belt loads to one of four platforms. Eight boxcars are placed along the side of each platform.

Bananas from this terminal will be sent throughout the Mississippi Valley, as far west as the Rocky Mountains and north across the border into Canada.

• **Passengers**—Improved passenger accommodations are also provided in the new terminal. Travelers on ships of the UFC will be cared for on a mezzanine 80 by 90 ft located above the conveyor systems and loading platforms.

Passengers will no longer go through the wharf to reach the ship but will go to and from the ship through the mezzanine. Customs and immigration facilities will be provided.

It is expected that the new passenger facilities will provide UFC passengers with more comforts than is offered by the older crowded industrial wharves.

Dallas annexes area of nine square miles

The Dallas, Tex., city council last week annexed a nine-square-mile blighted area known as West Dallas, which grew haphazardly and without zoning during the last two decades.

For the first time, trash collections were made, zoning and tax assessors went to work and police protection was given to the 30,000 inhabitants of the area.

West Dallas started to grow along the west side of the Trinity River soon after the Dallas levee system was completed in 1932. Poor sanitation, patchwork dwellings, lack of drainage, crime, poorly laid out streets and other blights marked the area. Heavy nuisance industries moved into the area, too.

Three factors prompted the city council to make its move:

• A group in West Dallas was threatening to incorporate the section as a separate municipality.

• The 3,500-unit West Dallas Housing Project (ENR Jan. 1, p. 38) is nearing completion. This project was planned on the assumption that West Dallas would be annexed. A $900,000-extension of a Dallas trunk sewer also is involved.

• The Corps of Engineers has started a $9-million Dallas floodway improvement project that will make drainage of the area easier.

Dallas City Manager Elgin E. Crull said it will cost an estimated $1.6 million to provide services for West Dallas during the next year, aside from permanent improvements. Meanwhile, he said, the city can expect to get only $361,123 from the area.

Engineer salaries

Starting salaries for 1952 engineering graduates of New York University averaged 9% higher than for 1951 graduates. The average monthly salary in 1952 was $328, and the range went from $250 to $425. Three-fourths of the engineers entered private industry.

The figures were reported by John A. Hill, assistant dean of the College of Engineering. The upward step continued a trend which, in each of the last six years except 1949, has produced annual increases. Current starting salaries average 45% higher than those of 1947.

The number of graduates entering Civil Service jobs dropped appreciably from 1951 (16%) to 1952 (7%).

"Probably the reason for this is the sizable difference between Civil Service starting salaries and those offered by private industry," Dean Hill explained. "Although a number of government agencies took aggressive action to attract engineering graduates, it does not appear that they were successful, except among civil engineers.

Port development plan assigned to engineers

The engineering firm of Knappen-Tippets-Abbett-McCarthy of New York has been retained by the Houston Port Commission to make a survey of the Port of Houston, and prepare a master plan for port development that may be carried out during the next 20 years.

Specific projects have been assigned to the engineers for study, among major points being the location, size, and other data concerning new wharves, primarily for cargo, but including at least one wharf suitable for passenger service.

Also under study will be improvements of the Port Terminal Railroad necessary to serve present and future wharves and industries on both sides of the Houston Ship Channel.

The survey will include location and estimated cost of a truck terminal, a public barge terminal, and a modern bulk handling plant.

The master plan will be divided into two parts, one part of which will deal with the next five years, with the other to provide planning for port development during the next 20 years.

Court action continues Fallbrook water case

Federal Judge Leon R. Yankwich has again continued the trial of the Fallbrook Public Utility District, sued by the U.S. government over water rights in the vicinity of the Camp Pendleton, Calif., Marine base.

The district has asked the U.S. Court of Appeals in San Francisco to restrain Judge Yankwich from holding the trial in Los Angeles rather than in San Diego, or from holding it at all. The higher court has not yet issued a decision, and Judge Yankwich continued the trial a second time, from Dec. 30 to March 3.

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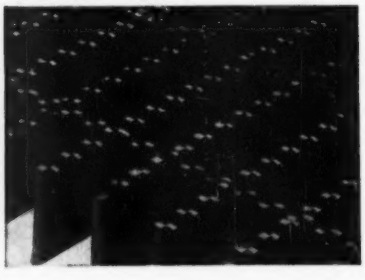
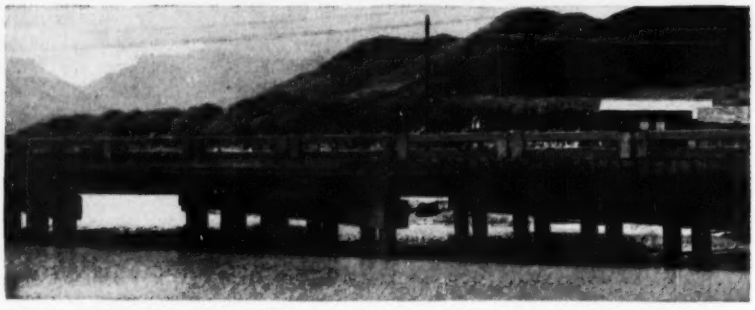


BUILT IN THE DRY this reinforced concrete Hawaiian bridge is 243 ft long.



NOW CROSSING THE WATER, the bridge spans a 10-ft deep drainage canal. (Photo by Wayne Peters)

Bridge built before waterway is dug

A bridge built over dry land in Hawaii this summer now spans 175 ft of water 10 ft deep.

Inter-Island Contracting Co. built it as the first in-the-dry bridge in Hawaii, to span the mouth of new Kawainui Swamp drainage canal.

Water was allowed to follow an old course while the bridge was built, then was diverted.

Seven rows of concrete piles were driven 35 ft into the sand. Then back filled to ground level to complete the pile caps. After the bridge deck was completed over the piles the contractor finished the waterway.

The canal is 10 ft deep, varies in width from 68 to 175 ft.

The bridge is a six-span, reinforced concrete structure, 38 ft 6 in. wide, and 242.88 ft long. Cost was $87,000. The canal cost $180,000.

Both are part of a flood control project to aid a fast-growing Honolulu suburban area on Windward Oahu.

Contractor files suit for payment of "extras"

Seeking reimbursement for "extras," a Cincinnati contractor has filed a $513,785-suit against the Montgomery County Commissioners, at Dayton, Ohio, charging a breach of contract.

W. L. Harper Co., the contractor, filed the suit as work neared completion on a $954,000-section of the Beavercreek District sewer system.

In the suit, Harper charged that the commissioners permitted another contractor to build water lines in the same area before the sewer system was installed, contrary to terms of the contract and entailing extra work for Harper. For this, Harper is demanding payment of $104,387.95 above the contract.

Harper also charged that (1) the commissioners authorized numerous changes which cost the company almost $60,000; (2) that it cost the company another $250,000 because the commissioners, through their agents, misrepresented ownership of the property in which the sewer system was to be laid; (3) that the county made test borings and said the soil condition was dry, when, in reality, it contained large quantities of water. For the latter, Harper is seeking payment of $100,000.

Controversy over the added expenses has flared since October. In November, the county commissioners approved payment of $37,203 to Harper for "unanticipated expenses."

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FRUEHAUF'S *COMPLETE* TRAILER LINE is your best bet for complete hauling satisfaction! Whatever the load, wherever the job—you'll find Fruehauf builds the Trailers you need, either standard or special.

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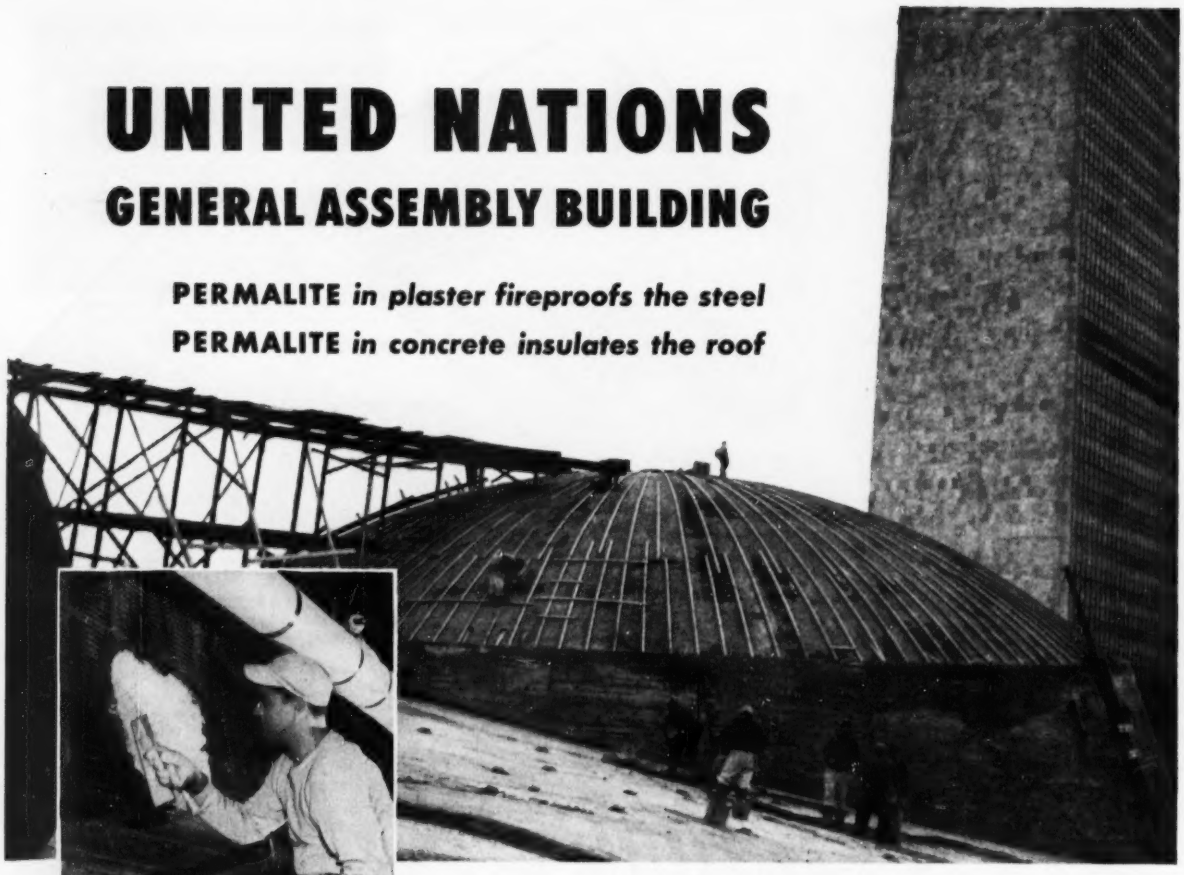
GENERAL ASSEMBLY BUILDING

PERMALITE *in plaster fireproofs the steel*

PERMALITE *in concrete insulates the roof*



54,000 sq. ft. of plaster with Permalite were used to fireproof steel not only in General Assembly Building but also in two meeting halls. Plaster was applied 1" thick on expanded metal lath over steel beams, girders, trusses.

500 cubic yards of concrete with Permalite were poured as roof fill—reducing dead load and heat transmission. The contractor "...found Permalite to be a workable material, easy to mix, place and screed without special equipment."

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The planners of the United Nations General Assembly Building have used Permalite for two important applications. Permalite, the leading perlite aggregate, was specified in plaster for fireproofing the structural steel; and in concrete for insulating roof fill. As a result, the maximum 4-hour fire rating for supporting steel has been achieved; and the roof has been insulated by lightweight concrete. For insulation, fire-resistance, lightweight and better workability, plan to use Permalite on your future jobs. Permalite meets rigid specifications of Underwriters' Laboratories fire test. Frequent production control tests assure uniformity and consistently high quality in these aggregates. Complete data in our bulletins PA-26, PA-7 and PA-9.

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DEL E. WEBB, president of Del E. Webb Construction Co., leader of a construction team that did $100 million in business last year.

Contractor to build and own seventh largest city in Arizona

Del E. Webb of Phoenix starts site work on $20-million, 8,000-population city near copper development

Building and owning the seventh largest city in Arizona is the latest project of Del E. Webb Construction Co. Right now, crews are surveying and platting the city site for a community of 8,000. It is 45 mi. north of Tucson.

The story of tall (6'4"), soft-spoken Del E. Webb—from carpenter to minor league baseball pitcher to million-dollar construction chief and co-owner of the New York Yankees—is a success story marked: "made in America."

No less fabulous than Webb's ascent is the rise of L. C. Jacobson—another "youngster"—who rose from time clerk to executive vice-president and general manager of Webb's construction company which last year did $100 million worth of building.

Sole owners of a construction firm whose red and black emblem is found in 20 states and the District of Columbia, they have led the Webb Company through $275 million in construction during the last five years and have a 1953 prospect of more than $150 million.

For instance, the company last year:

- Constructed more than $50 million in hospitals in six cities, chiefly for war veterans, as part of a $70-million hospital-building program engineered by the Webb firm.
- Substantially completed two industrial plants—one a $15-million guided missile factory at Tucson, Ariz., for the Hughes Aircraft Co., the other a $22-million plant for Pabco Products, Inc.
- In nine months, reactivated the Amarillo, Tex., Air Force Base in a $32-million project of 221 two-story dormitory buildings, and 13 messhalls to accommodate 1,000 men each.
- Embarked on a $26-million reactivation program at Fort Ord, Calif.; completed the lavish $5-million Hotel Sahara at Las Vegas, Nev. (the second plush hotel built there by the Webb firm), and built a $4-million parking garage and department store at Phoenix.
- Announced that it will build, own, and operate a complete model city with an estimated population of nearly 8,000 at the site of the tremendous Arizona copper development by the Magma Copper Corp.

Starting from scratch on raw desert, that community will be Arizona's seventh largest city. Webb is financing the $20-million project.

Another home-building program under supervision of his Webb Development Co., Inc., calls for expenditure of $13.6-million in construction of 1,712 home units in seven other Arizona and two California communities.

Down in the mere $1-million category are such items as: expansion of Tucson, Ariz., Municipal Airport to accommodate giant B-47 bombers; construction of stores, and other industrial development.

• **Operations**—Direction of the Webb empire is from Phoenix, Ariz., headquarters. There are district offices at Los Angeles, Kansas City, St. Louis, and New York.

The company follows a policy of training young men, and a number of the top executives are under 40. A majority of the personnel consists of men between the ages of 30 and 40. Yet most of the top members have put from 15 to 20 years' experience into the construction field.

Webb's employees benefit from a pension and profit-sharing plan and life insurance on which the company pays all premiums.

• **Confidence**—All of these factors make a well-organized company team in which the boss places full faith.

Not long ago, for instance, Webb attended a baseball game while representatives of his construction firm submitted the low bid of nearly $9-million on a segment of the Amarillo Air Force Base job.

It wasn't that Webb was not interested in a project which in nine months of building meant $1 million in job completion every 10 days. It was his confidence in men like Jacob-

(*Continued on page 62*)

THE MEMBERSHIP OF A C. I. P. Century Club now has

96%

OF ALL 6-INCH AND LARGER CAST IRON WATER MAINS EVER LAID IN 25 REPRESENTATIVE CITIES ARE STILL IN SERVICE.

Based on the findings of a survey conducted by leading water works engineers.

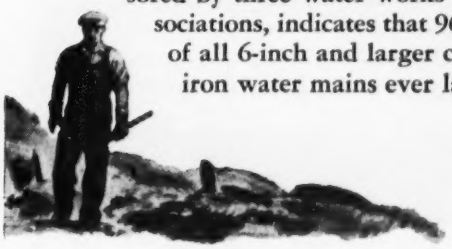
CAST IRON PIPE

DISTINGUISHED CLUB...
43 Members

The Cast Iron Pipe Century Club is probably the most unusual club in the world. Membership is limited to municipal, or privately-owned, water and gas supply systems having cast iron mains in service for a century or more.

Although the Club is formally constituted, there are no dues, no regular meetings, and no obligations other than to inform the Recording Secretary if and when the qualifying water or gas main is taken out of service, or, sold for re-use.

In spite of the unique requirement for membership, the Club roster grows, year by year. And why not, when a survey sponsored by three water works associations, indicates that 96% of all 6-inch and larger cast iron water mains ever laid



in 25 representative cities are still in service. And when answers to a questionnaire, mailed to gas officials in 43 large cities, show that *original* cast iron mains are still in service in 29 of the cities.

If your records show a cast iron main in service, laid a century or more ago, the Club invites you to send for a handsome framed Certificate of Honorary Membership. Address Thomas F. Wolfe, Recording Secretary, Cast Iron Pipe Century Club, Peoples Gas Bldg., Chicago 3, Illinois.

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Fall River, Massachusetts
CITY OF FREDERICK WATER DEPT.
Frederick, Maryland
GAS DEPARTMENT
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THE HARTFORD GAS COMPANY
Hartford, Connecticut
MUNICIPAL WATER WORKS
Huntsville, Alabama
BUREAU OF WATER
Lancaster, Pennsylvania
LOUISVILLE GAS & ELECTRIC CO.
Louisville, Kentucky
CITY OF LYNCHBURG WATER DEPARTMENT
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Mobile, Alabama
MOBILE WATER WORKS COMPANY
Mobile, Alabama
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City of Nashville, Tennessee
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WATER DEPARTMENT
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WATER DEPARTMENT
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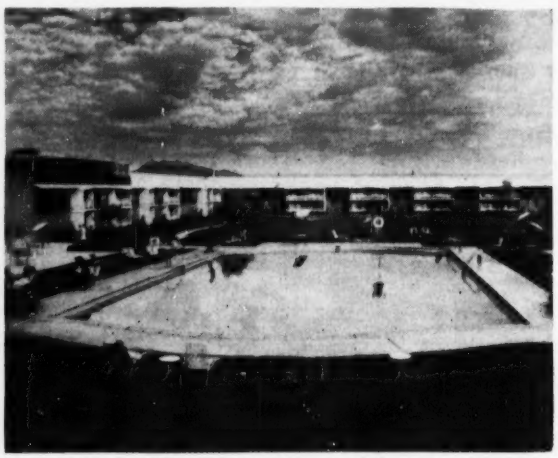
York, Pennsylvania
WATER DEPARTMENT
City of Zanesville, Ohio

SERVES FOR CENTURIES

TEAM of the Webb Co. consists of: Jim Paul, left, development manager; Del Webb; and L. C. Jacobson, general manager.

RESULTS are projects like this 31-dormitory at Fort Ord, Calif., which will furnish permanent housing for 225 men each.

THIS Park Central Medical Building (rear) at Phoenix adjacent to the $4-million 400-bed St. Joseph's Hospital (foreground)



AND THIS $5-million Hotel Sahara at Las Vegas, Nev. The 240-room hotel is the second in Las Vegas built by the firm.

son, J. R. Ashton, his Phoenix district manager, and R. H. Johnson, his Los Angeles district manager, that allowed him to relax while he watched one of his chief loves—the New York Yankees.

• **Career**—Webb learned the carpentry trade from his father, a Fresno, Calif., contractor, sand and gravel man.

In 1926, he decided to leave California and move to Phoenix.

When the contractor for whom he was working abandoned a job, Webb completed it (a grocery store).

He started looking for other opportunities. They came fast. The grocery store chain was expanding and Webb moved along with it, building many new units.

When World War II started, the Webb Company already was one of the largest and busiest in the Southwest and had a fine financial rating. Webb bid on a number of Army camps, flying fields, internment camps, hospitals, and other military installations and emergency housing.

The war years delayed, for a decade, a nationwide expansion program planned by Webb and Jacobson, but after the war the scope expanded tremendously.

Some of the outstanding postwar contracts were: A $30-million chain of cheese plants across the country for the Kraft Foods Corp.; a $22-million linoleum factory for Pabco at Metuchen, N. J., and a $70-million string of veterans hospitals at Phoenix, Portland, Ore., Kansas City, St. Louis, Denver, and Livermore, Calif.

Another $6-million private hospital is nearing completion at Phoenix where the Webb Company has built more than half of the major business buildings during the last 15 years.

• **Policies**—Of his construction policies, Webb says:

"Precutting and prefabrication and packaging of materials; prefabrication of plumbing and mechanical units and streamlining the various labor and subcontract operations in order to produce efficiency from the labor are some of the important functions in handling large multiple projects for which we have developed improved methods."

Though in major league baseball as an owner less than a decade, he has played a dominant role. Webb's early baseball interest never died. A good right-hand pitcher and left-handed hitter in his youth, he followed the diamond avidly. When in 1945 he became one of the Yankee owners in partnership with Dan Topping, it was the realization of a youthful ambition to become a major leaguer.

It was good business, too. The Yankees are tops in their field.

The Answer to the Noise Problem in Industrial Plants

Large perforated panels of Reynolds Aluminum attractively formed and finished, backed by sound absorbing material . . . that's the basis of this new acoustical system acclaimed as the first practical way to reduce dangerous and costly noise in large plant areas. Introduced only a few months ago, and with military needs limiting supply, installations already total millions of square feet . . . including some of the biggest names in industry. Outstanding acoustical architects are now specifying it! Read the advantages summarized here. Then write for literature.

Reynolds Metals Company,
2009 South Ninth Street, Louisville 1, Kentucky.

Low Cost. Low material cost; fast, labor-saving installation.

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High Sound Absorption. Up to .90 and high at all frequencies.

•

Unlimited Access to utilities . . . any section movable at will.

•

Low Maintenance. Rustproof, non-staining panels removable for cleaning.

•

Fire Resistant. Both aluminum and sound-absorbent backing are incombustible.

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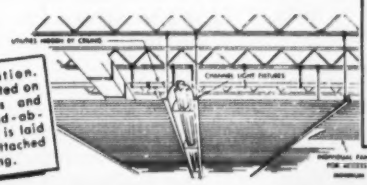
Low Weight. Completed ceiling weighs less than one-half pound per square foot.

•

Modern Design. Eye-pleasing corrugations in straight-line or pattern effects.

•

Adaptability to any air-conditioning, including plenum chamber above panels.



Typical installation. Panels are supported on aluminum angles and T-sections. Sound-absorbing material is laid on panels or attached directly to ceiling.

FRANCHISED APPLICATORS

Contact nearest listed for engineering service, free estimates.

ALABAMA: Bodham Insulation, Birmingham; Stokes Interiors, Mobile.

CALIFORNIA: Pacific Acoustics, Los Angeles; Sound Reduction, Oakland.

COLORADO: Danco, Inc., Denver.

CONNECTICUT: Wilson Construction Co., Hartford.

DISTRICT OF COLUMBIA: T. M. Woodall, Inc., Takoma Park.

FLORIDA: Standard Insulation, Fort Lauderdale; Cliff Haller, Orlando.

GEORGIA: Lewis & Co., Atlanta.

ILLINOIS: Anning-Johnson Co., Chicago.

INDIANA: Anning-Johnson Co., Indianapolis.

IOWA: Anning-Johnson Co., Des Moines.

KENTUCKY: Braun Acoustical Co., Louisville.

LOUISIANA: Walker Lloyd, Baton Rouge.

MAINE: Edw. F. Byrnes Co., Portland.

MARYLAND: Limbach Co., Hagerstown.

MASSACHUSETTS: Edw. F. Byrnes Co., Boston.

MICHIGAN: Nichols Co., Detroit; Harold R. Sobie Co., Grand Rapids.

MINNESOTA: Anning-Johnson Co., Minneapolis.

MISSISSIPPI: Stokes Interiors, Jackson.

MISSOURI: Hamilton Co., St. Louis; Stokes Co., Kansas City.

NEW JERSEY: Woolsulate, East Orange; W. M. Meyer Co., Quakerstown.

NEW MEXICO: Welch-Erwin, Albuquerque.

NEW YORK: Albany Acoustical Corp., Albany; A. P. Madden Co., Syracuse; Davis-Petch, Buffalo, Rochester, Jamestown; Wm. J. Scully Corp., New York.

N. & S. CAROLINA: Bonitz Insulation, Greensboro, Columbia.

OHIO: Gallin Co., Cleveland; J. H. Archibald Co., Cincinnati.

OKLAHOMA: Ball Dist. & Eng. Co., Tulsa, Oklahoma City.

OREGON: Steward Griffith Co., Portland.

PENNSYLVANIA: Limbach Co., Pittsburgh; W. M. Meyer Co., Philadelphia.

TENNESSEE: Alexander Co., Memphis; John Beretta Co., Knoxville; Workman Co., Nashville.

TEXAS: C. F. Schilling Co., Houston; Gen'l Supply Co., San Antonio; Acoustic Builders Co., Dallas; Welch-Erwin, El Paso.

VIRGINIA: McL. T. O'Ferrall & Co., Richmond.

WASHINGTON: G. D. Bradley Co., Seattle.

WISCONSIN: DeGelleke Co., Milwaukee.

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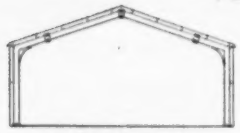
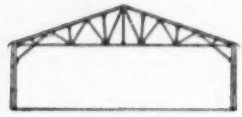
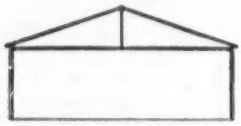


RIGID FRAME TYPE



TRUSS TYPE



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Finished square foot cost including foundation, erection and all mechanical branches was much lower than a specially fabricated building of similar design.

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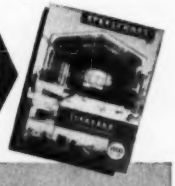


STEELCRAFT
MANUFACTURING COMPANY
Rossmoyne, Ohio (In Greater Cincinnati)

J. D. McCoy receives Reclamation Award

Supervision of preconstruction surveys on the San Diego Aqueduct's second barrel, resulting in rapid progress in placing the waterway under construction, has won for J. D. McCoy, assistant project engineer, a Superior Accomplishment Award. The Bureau of Reclamation award is accompanied by an increase in McCoy's annual salary.

"McCoy's work in connection with preconstruction surveys and design data was the key to rapid progress on this project," according to the Bureau's Region 3 Director E. G. Neilsen.

Starting with only four employees, early in November, 1951, McCoy created an organization which grew to 15 employees. With this group, he completed the work rapidly enough to permit bids to be received on the first section last August. On Oct. 29, the first concrete pipe was laid and on Nov. 20, bids were opened for the last section of the aqueduct.

McCoy, a native of Frankfort, Ind., holds a Bachelor of Science degree in Civil Engineering from the University of New Mexico. He joined the Bureau of Reclamation in November, 1938, as transit man on the Tucumcari project, New Mexico. Successive assignments included work in the Office of the Chief Engineer in Denver, and investigations of the San Diego Aqueduct beginning in November, 1943. In March, 1946, he was transferred to the Dixie project investigations at St. George, Utah, and returned to Escondido in March, 1949, as area planning engineer in charge of Santa Margarita and second barrel investigations. With the start of construction of the second barrel, he was appointed assistant project engineer on July 6, 1952.

("Men and Jobs" continued on p. 66)

333,333 YARDS TO THE MILE... AND A LORAIN 820 FOR EVERY MILE!

Rock-ribbed New England is a rugged proving ground for *any* shovel. The 22 ft. rock cut in the photo is one of the many tests of shovel performance on the new Boston to Lowell Turnpike. 1,500,000 yds. will have to be moved on this 4½ mile section near Bedford, to build a dual, 34 ft. wide, modern highway.

Peter Sulvucci, Boston, Mass., has a $2,036,000 contract on this job. The big 2-yd. Lorain shovel, Model 820-J, shown in the cut is but one of 14 Lorains he has purchased over the years for his New England jobs. Contractor Sulvucci could not afford to repeat with Lorains time after time, year after year, had not these rugged machines stood the repeated rock tests to which he has subjected them.

When you think of rock, you've got to think of a shovel that can really take lots of punishment . . . shocks and impacts . . . that can keep on crowding into a rocky face no matter how tough the going, with its "never-say-die" power.

The big 2-yd. Lorain "820" solves those problems. With its Hydraulic (fluid drive) Coupling, shocks and stresses can't reach turntable mechanism or cables because they melt away in the Fluid Drive. The engine cannot stall under any digging circumstance — again, the Hydraulic Coupling allows full power to be applied at all times. You get real rock busting — not shovel busting performance with the big "820" on your rock job.

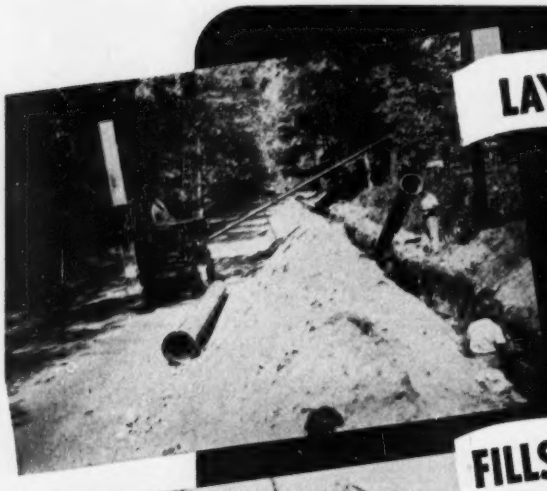
When you think of rock . . . think of your Thew-Lorain distributor . . . and the line that offers you greatest values for the toughest of digging. Other jobs will come easy.

THE THEW SHOVEL CO., LORAIN, OHIO

NO ROCK CAN STOP A

THEW LORAIN 820

THE CLEVELAND 80
with just 1 man



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- Long Reach
- Sure Clutches
- Smooth Brakes

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- Fills Fast
- Fills Clean
- Saves Lawns, Sidewalks, etc.
- Fits Wide Range of Trench Sizes

TAMPS FILL

- Thorough Compaction
- Practically 100% Automatic
- Easy 1 Man Operation
- Tamps, Fills, Travels, All at Same Time

CLEANS UP

- Fills From Either Side of Trench
- Eliminates Extra Equipment
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Careers . . .

• **Appointed**—Nebraska State Engineer **Harold L. Aitken** has been reappointed by **Governor-elect Robert B. Crosby.** . . . **W. Orme Hiltabidle** is assistant to the president, Charles H. Tomkins Co., Washington, D. C., construction firm. Hiltabidle retired last year as vice admiral (CEC) USN. . . . **David F. Dabney,** a traffic planning engineer, has joined the staff of Palmer & Baker, Inc., Mobile, Ala., consulting engineers. . . . Appointed head of New York State Department of Public Works, Rochester district is **Elmer G. H. Youngmann.** He will be succeeded as assistant engineer of the Buffalo district by **Edgar N. Scott.**

Earl R. Bryant has been appointed technical service director of Universal Atlas Cement Co., succeeding **Homer G. Farmer,** who retired Dec. 31 after 41 years of service with the company. . . . **R. Sampson,** civil and structural engineer will direct Stelmac Engineers, a coordinated engineering service. . . . **Bert B. Williams** has joined the Dotterer Engineering Co., in its department of structural engineering design.

• **Elected**—**Stephen D. Bechtel,** president of Bechtel Corp., was elected a director of the Southern Pacific Co. two weeks ago. . . . Elevated to chairman of the board of directors of Browning Crane & Shovel Co. is **Sheldon Cary,** former president. His son, **John R. Cary,** has been elected president. . . . Ford, Bacon & Davis, engineers-constructors of New York, Chicago, Los Angeles, and Toronto, announced last week that **C. R. Sample** and **C. S. Petrarsch, Jr.,** were elected vice-presidents and **C. J. Abbott** was senior vice-president. . . . Named president of Texas Construction Council was **Uel Stephens.** . . . General contractor **Harry Griffith** has been installed as president of the Los Angeles chapter of Building Contractors Assn.

• **Retired**—**O. E. Brashears,** Yakima County road engineer at Yakima, Wash., for more than 42 years, has announced that he has retired Jan. 10. He was elected to the position for three terms until the position became appointive in 1925, and since then he has been appointed term after term. . . . **George A. Quinlan,** who directed the expansion of the network of highways in Cook County, Ill., from one mile of concrete to 2,000 mi of paved roads, has announced his resignation as superintendent of the county highway department.

THE ENGINEER'S REPORT

DATA

PRODUCT Chevron Starting Fluid

UNITS Diesel engines

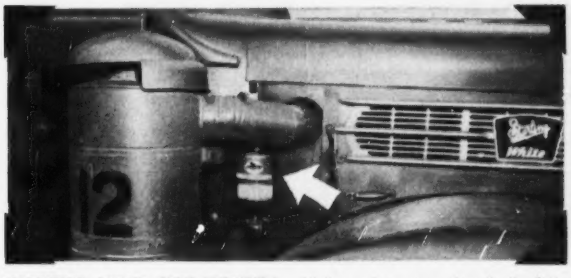
CONDITIONS Sub-zero temperatures

EQUIPMENT Permanent dash-mounted primers—bulk storage tanks

FIRM Picco Logging Co., Montesano, Wash.

Diesels start instantly at 20° below zero!

PRIMED WITH CHEVRON STARTING FLUID, diesel engines in Picco Logging Co. trucks "start instantly, even in winter temperatures that sometimes reach 15° and 20° below zero," according to E. W. Picco, owner. Previously, the company lost from 10 minutes to an hour a day in starting each truck. And often, when left out overnight, trucks had to be towed before they would start. The dash-mounted pump shown above is worked once or twice as the engine turns over, forcing fluid through atomizers into manifold.



MOUNTED NEAR THE ENGINE, this storage tank holds bulk Chevron Starting Fluid. It is also available in 7- and 17-CC gelatin capsules. These capsules are placed in a puncturing tool, and fluid is pumped into intake manifold the same way as from the central bulk tank shown. Each type of dispensing equipment is suitable for both diesel and gasoline engine and is available from your starting fluid supplier. Chevron Starting Fluid is approved by leading engine manufacturers.

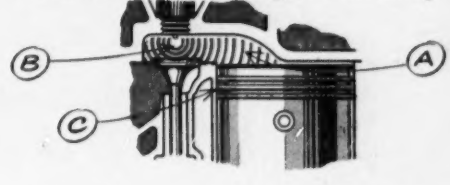
HOT NEWS — COLD ENGINES

FREE BOOKLET gives you more facts on Chevron Starting Fluid—shows where it should be applied in different type engines. Write or ask for it today.

CHEVRON STARTING FLUID

TRADEMARK REG. U.S. PAT. OFF.

How CHEVRON Starting Fluid Starts Gasoline and Diesel Engines Instantly



A. Atomizes in lowest temperatures and provides powerful, easily ignited vapor in combustion chamber.

B. Pressure, or the weakest spark, fires mixture—turns engine and heats air for regular fuel mixture.

C. Contains lubricant and additives—inhibits cylinder wear, and ice formation in primer equipment.

FOR MORE INFORMATION about this or other petroleum products of any kind, or the name of your nearest distributor handling them, write or call any of the companies listed below.

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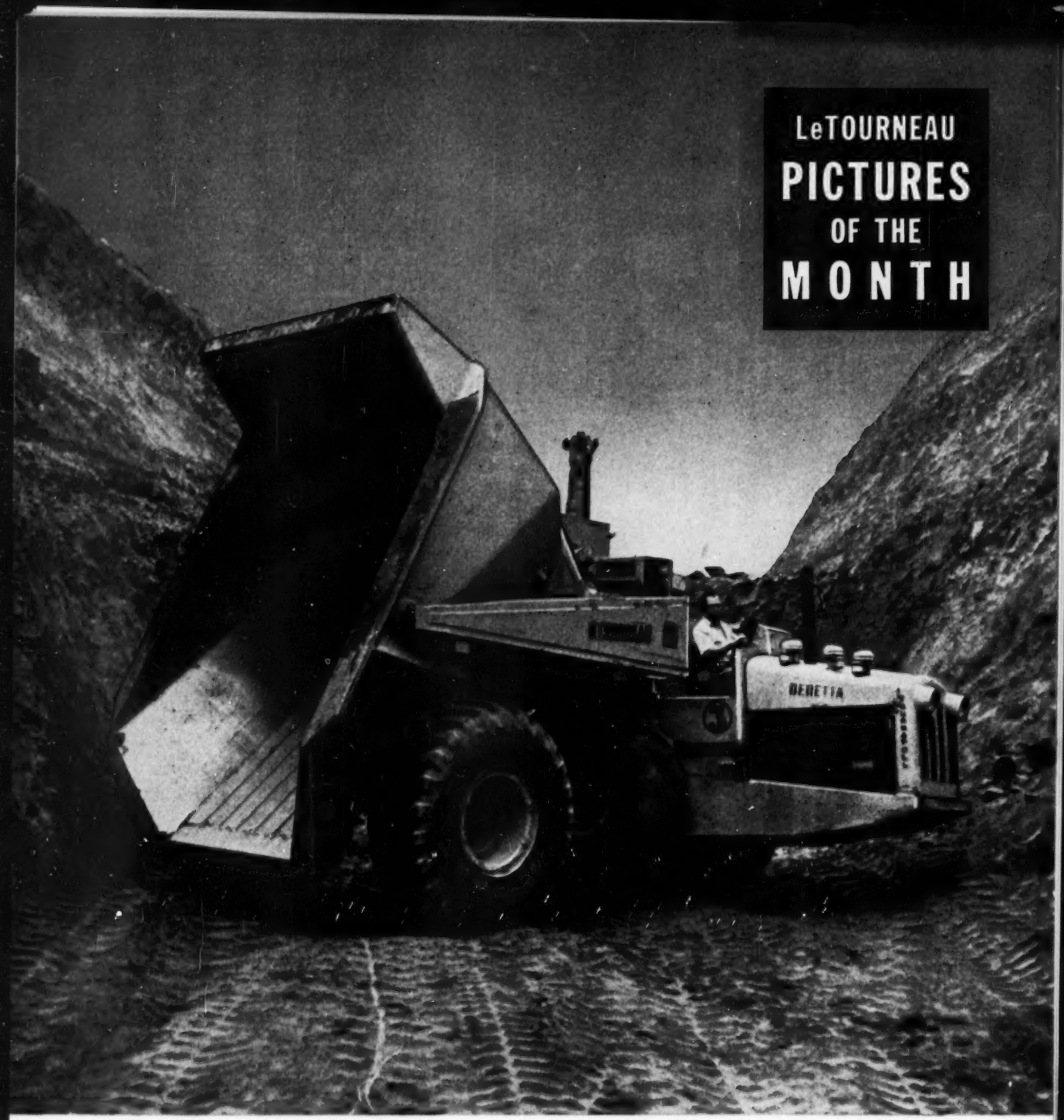
THE CALIFORNIA OIL COMPANY • Barber, New Jersey
STANDARD OIL COMPANY OF TEXAS • El Paso
THE CALIFORNIA COMPANY • Denver 1, Colorado



TURNS IN 26-FOOT-WIDE CUT

Tournarocker maneuverability really paid off for Beretta & Novi, Brazil contractors, on this 654,000-yd rail relocation. Rather than back slowly 1000 ft or more down a 26-ft-wide cut, their two 16-ton Rear-Dumps drove in frontwards and turned around non-stop at the shovel. "Tournarockers' short turning radius (10½ ft with bowl raised) saved construction of access roads and turn-arounds," reported Giovanni Sala, project manager. Turn-arounds would have been very costly here. Cuts ranged from 50 to 100 ft deep. Units also saved time by dumping over bank, eliminating dozer cleanup. Some loads were spread on the fill in controlled layers. "These are the only units I know of," says Sala, "that can dump on the fill similar to bottom-dumps and over banks as end-dumps. Their interchangeability feature also made money for us." (Tournarocker prime-movers also power scrapers, bottom-dumps, cranes and flatbeds.) Beretta & Novi owns 10 Tournapulls in addition to their 2 Tournarockers. They report, as typical output, 78,000 yds in 100 days for their 2 Tournarockers in shovel-loaded sandstone and clay . . . 314,000 yds in 100 days for 6 of their Tournapulls push-loaded in sandy loam and clay. Hauls averaged 4250 ft on both sections of the job.

(ADVERTISEMENT)

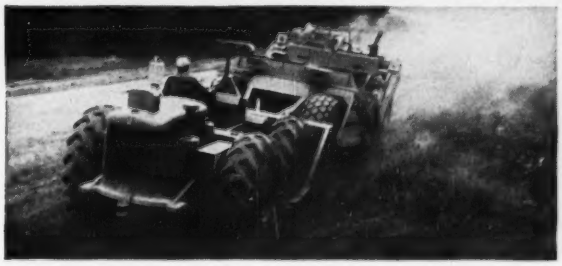
(ADVERTISEMENT)

Performance reports on LeT equipment in action . . .

WORKS YEAR-ROUND — Bill Crawford, Buffalo, works his 2 C Tournapulls throughout the winter when most rigs must shut down. When frost is too deep for profitable scraper operation, he loads his "C's" by shovel. On typical winter job — digging grade crossings in Lancaster, NY — the 2 shovel-loaded Tournapulls moved 60 loads daily over 2-mi cycles.

PREPARES 4000 FT SUB-GRADE DAILY — That's the report from V. N. Holderman & Sons, well-known Ohio firm, on the output of this D Tournapull handyman. "The 7-yd 'D' releases big tools for production jobs and helps reduce costs generally," they say. Rig self-loads 5 pay yds, even in clay, often hits 28 mph on typical 8000-ft cycles through open traffic.

PLOWS 600 MI IN 4 DAYS — Clearing Wisconsin roads after heavy snow, Buffalo County Tournatractor averages 10 to 19 mph. "Haven't found snow deep enough to stop machine," says County Comm Schultz. Rig has gone through 12-ft drifts.



DOES 2 JOBS, 12 MI APART — This high-speed, rubber-tired Tournadozer alternately worked a highway job near Birmingham, an airport at Pontiac, Mich. On road work, it push-loaded 24 to 30 loads hourly. When scrapers worked long hauls, Tournadozer drove over highway to airport where it backfilled drainage tile. Rig replaced 2 crawlers, was 96% efficient.

LICKS 30% GRADES — Fully-loaded 16-ton Tournarocker hauls 12 pay yds of rock and dirt to Lookout Point Dam fill. Operator hit high speeds with complete safety. Rig has air brakes on all 4 wheels. Multi-discs provide 3763 sq in. total braking surface — 4 times as much as most haulers. Big low-pressure tires improve traction on the steep, often slippery haul roads.

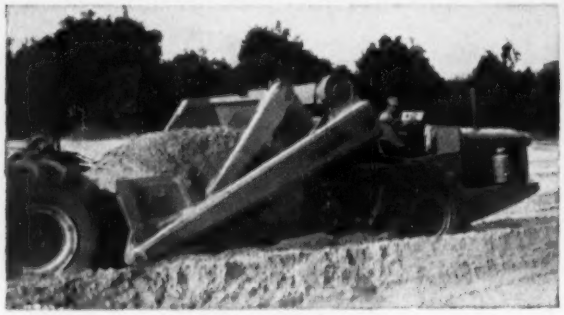
Continued on next page

(ADVERTISEMENT)

LeTourneau pictures of the month (cont'd) . . .

170% MORE DIRT WITH RUBBER — Time studies taken recently on Lowe Constr Co.'s 220,000-yd hwy relocation job at Cedar Rapids reveal some interesting figures comparing rubber-tired 186 hp Tournatractors and 124 hp crawler-tractors. Towing same size scrapers (17½ yds heaped), both types of prime-movers averaged 12 pay yds of yellow clay per load. Haul times, however, varied widely. Tournatractors regularly made a 4200-ft cycle in 6.9 minutes. Crawlers completed a 1900-ft cycle in 8.35 minutes. Tournatractors, with 19 mph top speed, averaged 9 mph, for 7¼ trips hourly . . . crawlers, with top of 6 mph, averaged 3.4 mph, for 6 trips hourly. On a station yd basis, Tournatractors moved 170% more dirt — 1827 to 684 station yds per hour.

MUD-HOG — Building stockpond after winter thaw, D Tournapull worked through normal shut-down weather. "Tournapull went loaded where other rubber-tired rigs couldn't go empty," said Owner John Hollerich. The "D" even got through mud radiator-deep. Its output on this LaSalle (Illinois) job: 70 pay yds (14 trips) of gumbo and wet clay hourly on 400-ft cycles.



NEW RECORD FOR SAND — On 325,000-yd relocation of Florida Rt 50, H. E. Wolfe's 3 C Tournapulls move ball-bearing sand at record pace. On 1000-ft hauls, they average 510 pay yds hourly. With low-pressure tires and power-proportioning differential, "C's" pull easily through the soft sand. "They move more yds per day than any rig of their size," says the Job Supt.

125,000 YDS IN 950 HRS — That's the 9-week record of Martin Goebel's Tournadozer on stockponds in Texas. Here, rig has just dug a 3500-yd pond in 20 hrs. Same job would have taken 60 hrs with contractor's 85 hp crawler. Tires have needed no maintenance despite abrasive material. Track rollers must be replaced every 90 days, according to contractor.

(ADVERTISEMENT)

Performance reports on LeT equipment in action

CARRIES 12½ TONS OVER HIGHWAY — The Queen City Concrete Pipe Corp took 25,600-lb sewer pipe sections 1.1 mi through Evansville (Ind) city traffic with Tournacrane. Rig lifted 120-in. (ID) sections at casting site, carried load on short boom to prevent whipping. Transit speed averaged between 10 and 15 mph. Low-pressure tires cushioned bumps. No damage reported to pipe or highway. Rig needed no outriggers. Newer C Tournacranes can move loads of 20 tons. Top speed is 40 mph.

GIANT — Tire, 10 ft high, 4 ft wide, gets test run on 35-ton Tournapull before installation on special "swamp buggy" being designed by LeTourneau. Firestone built, tire has no tube, runs over marshy ground on pressures as low as 10 to 15 lbs.

FLYING GOLD-MINER — To reach isolated mine in center of Nicaragua, this 9-ton Tournarocker was cut apart and flown 110 mi over the jungle. Re-welded at job, it now hauls gold ore and waste to crusher. In typical month, it worked 356 hours, hauled 4698 tons. Hauls averaged 9800 ft, all up-grade, with 9500 ft at 3 to 10%, 300 ft at 12 to 20%.

SCRAPER BECOMES GRADER — LeTourneau 7-yd Tournapull spreads load at housing project near Dayton, Ohio. "Rig replaced 3 dump trucks and a loader," reports Owner W. A. Wadsworth. "Even used it to finish-grade within 1-inch, which is just as efficiently as we could do the job with a grader."

Tournapull, Tournadozer, Tournarocker, Tournacrane — Trademarks Reg. U. S. Pat. Off. Tournetractor—Trademark C. [illegible]

WRITE OR PHONE — If you'd like more information on LeTourneau equipment, get in touch with your LeTourneau Distributor or write us direct. We'll be glad to tell you about any of the tools described on these 4 pages. You also should check the new Tournatractor, shown here stockpiling lime rock in Florida.
— R. G. LeTOURNEAU, Inc., PEORIA, ILLINOIS

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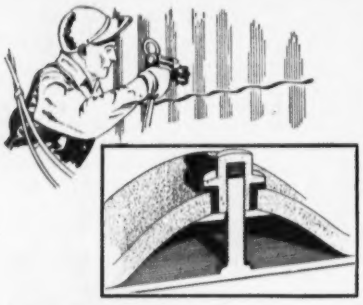
FOR EXAMPLE...
CORRUGATED ASBESTOS ROOFING AND SIDING



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NELWELD

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INTERNATIONAL

Brazilian state asks World Bank funds for roadbuilding machines

A $3-million World Bank loan is being sought by the highway department of the State of Rio de Janeiro, to purchase road-building equipment for the state's new $37-million construction program.

The equipment would be used by the state to maintain its existing highway network, while carrying forward a high-priority program of new road construction and paving. The program, which got under way this month, is aimed at making possible better distribution of the growing agricultural production of the northern portion of the state.

The loan application was approved by the Joint Brazil-U. S. Economic Development Commission, and by President Getulio Vargas. World Bank now has two technicians on the scene to make a further study. Meanwhile, the state has already started, using its present old and wornout equipment.

• **Road plan**—The plan includes six high-priority projects, budgeted at Cr$37 million (US$18 million), among the most important being:

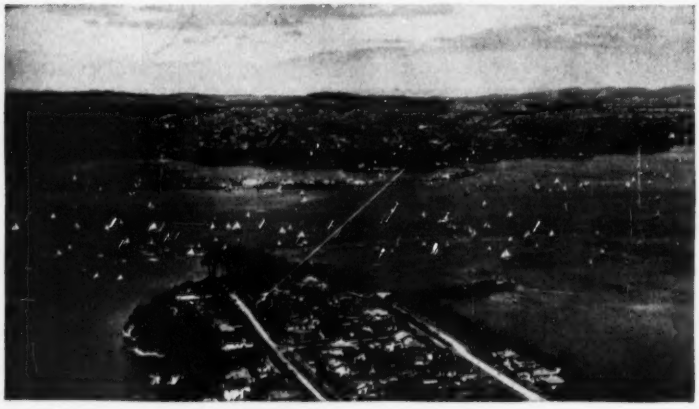
1. Finishing the first-class paved road at the turn of Guanabara Bay, connecting Niterói, the state capital, with the city of Rio de Janeiro, the nation's capital.

2. Improvement and paving of the highway from Niterói to Campos, most important city in the north and center of a rich and promising agricultural region.

3. Construction of a road linking Campos with the Paraiba River valley, and the valley with Rio de Janeiro.

A second series of projects, part of the same over-all five-year plan, includes the construction of a road totally paved connecting Rio with the mountainous area around Nova Friburgo. This second series is budgeted at ($18.9 million).

(*Continued on page 76*)



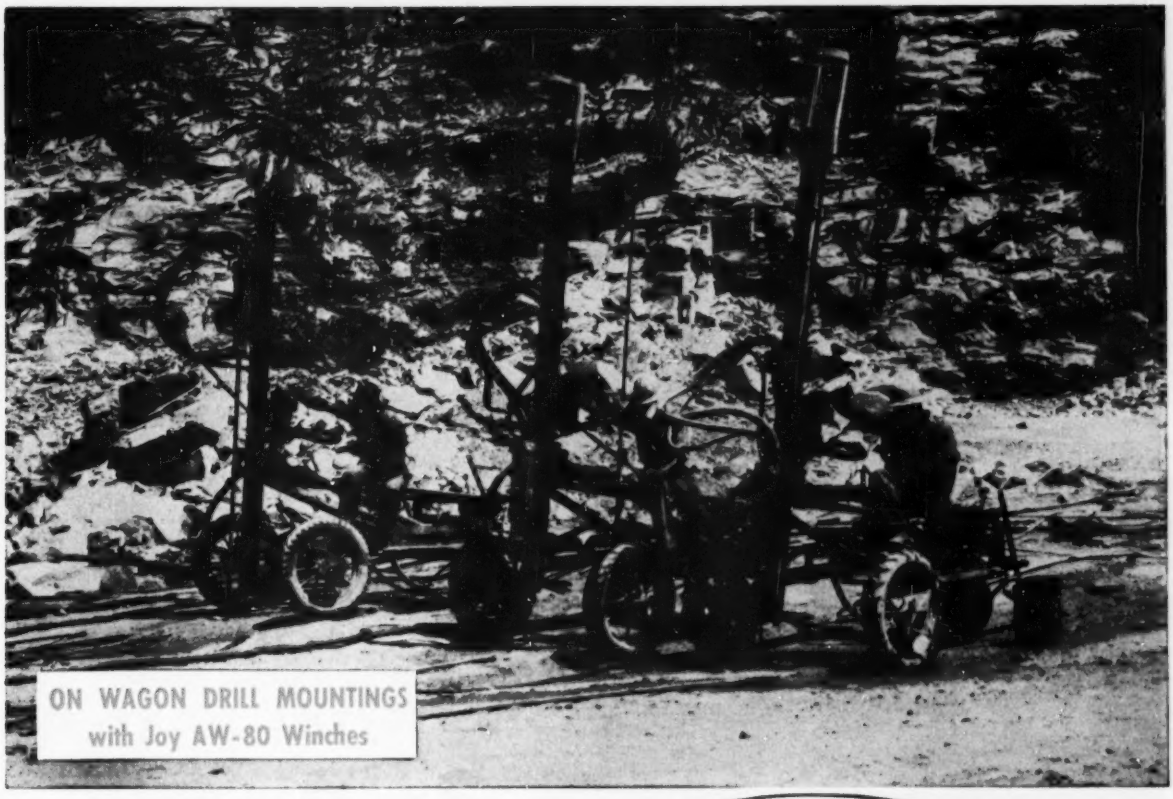
British firms get $1-million New Zealand bridge contract

Two British engineering and construction firms have been awarded a $1-million contract for construction of what will be one of the largest bridges in the southern hemisphere—a 3,520-ft truss structure across Auckland Harbor, New Zealand.

Each of the firms (Dorman, Long & Co. and Cleveland Bridge and Engineering Co.) will fabricate half of the 10,000 tons of steel to go into the superstructure, and the two will work jointly on foundations and erection.

Expected to be completed in four years, the bridge will have a center span 800 ft long, with clearance over mean high water of 142 ft.

White line in accompanying photo shows location of new structure. (Eastern Publishers' Service photo).



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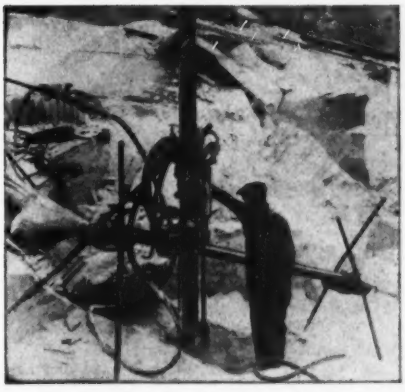


ON QUARRY-BAR MOUNTING

Watch daily footage INCREASE and costs per foot go DOWN!

JOY Silver Streak Drifters feature the exclusive *Dual Valve* with positive cushion control. It gives a harder, more powerful punch—literally makes air do more work. What's more, JOY Drifters *last longer*—give you more feet of hole with less maintenance. Exclusive *cadmium plating*, inside and out, inhibits rust, prevents scoring during run-in, and at the same time, adds power by permitting closer piston tolerances. ● Ask for a trial demonstration on JOY Drifters—the T-300, T-350 or T-400—*prove their all-around superiority right on the job!*

Write for Bulletin, or

Consult a Joy Engineer

W&D R 2818

JOY MANUFACTURING COMPANY

GENERAL OFFICES: HENRY W. OLIVER BUILDING · PITTSBURGH 22, PA.

IN CANADA: JOY MANUFACTURING COMPANY (CANADA) LIMITED, GALT, ONTARIO

. . . One

DOES THE WORK OF 3 TO 4

Hauling 1500 pounds or 10 cu. ft. (struck) of bulk materials each trip, Kwik-Mix Moto-Bug easily does the work of 3 to 4 hard-to-get manual laborers. It travels *twice as fast* and hauls *three times as much* as a man with an ordinary wheelbarrow. On many jobs, owners report Moto-Bug pays for itself in less than 30 days, from savings in labor alone. It hauls concrete, plaster, brick, tile — anything you can shovel, pile or stack into the hopper body.

Compact, light, Moto-Bug rides to upper stories in regular construction elevators. Or it climbs 20% ramps to the top, fully loaded. 75% of loaded weight on front drive-tires gives plenty of grade-climbing traction. Short 61-inch turning radius, 33-inch width, and hinged riding step, make it easy to clear crowded work areas. Hopper body has instant gravity dump with snub-line control.

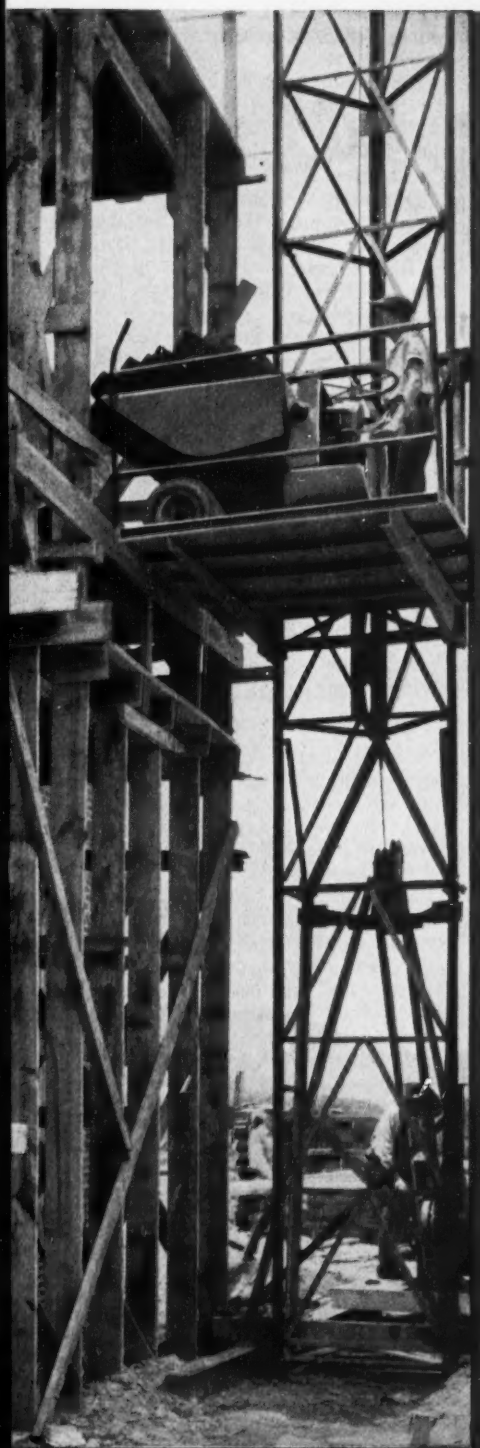
No push, *no pull* — Full power forward and reverse gives fast backing and spotting. Reverse is instantaneous. There's 3.6-to-1 gear ratio on big steering wheel for effortless maneuvering. Dual steering wheels, and optional duals on the drive end, provide plenty of rubber-tired traction, flotation and handling ease on or off pavement.

3-tool usefulness — Interchangeable ¾-ton capacity platform and ½-ton (5-foot) fork lift extend Moto-Bug's labor-saving economies to all kinds of material handling. Check for yourself. See Kwik-Mix distributor or write us for demonstration.

SEND FOR MOTO-BUG JOB REPORTS

for KWIK-MIX COMPANY

(Roehring Subsidiary)

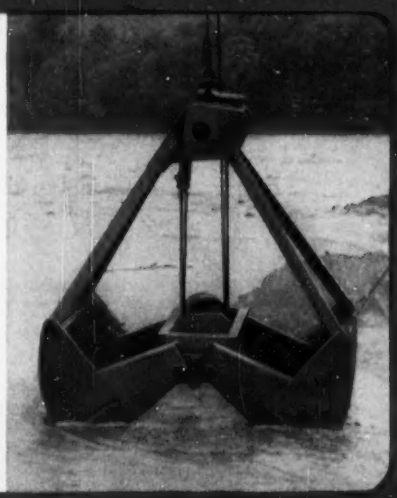


2 MOTO-BUGS, rising mast elevator, distributed all blocks, bricks, mortar and concrete on Rocky Point, Va. school building (above). "Haven't spent a cent on them in 6 months", says the job foreman. "They're tough buggies — and they have saved

¾ to 2½-yard Johnson Clamshell Buckets

Because all-welded construction keeps center of gravity low, Johnson Clamshell Buckets dig in straight, deep . . . get capacity load every bite. Big needle-bearing-mounted sheaves reduce friction loss, deliver full digging power to cutting edge. Hard manganese edge, welded to heavy lips, toughens with use. 3 types, 10 sizes from ⅜ to 2½-yds. Also check Johnson line of concrete mix plants, bins, batchers, hoppers, silos.

C. S. JOHNSON *(Koehring Subsidiary)*
Champaign, Ill.



18½-ft.-per-min. Parsons 215 Trenchliner®

With 30 digging feeds, this cross-country 215 Trenchliner digs 6 in. to 18½ ft. per min., 13 to 31 in. wide, up to 6 ft. deep. Square or round-bottom buckets have "easy-in, easy-out" Tap-In teeth. Standard tractor-type crawlers have 18-in. treads, lug-type shoes. Other Parsons Trenchliners: wheel-type 202 for drainage and utility work; 3 ladder-types, full crawler mounted; and the mobile, utility size rubber-tired Trenchmobile®.

PARSONS *(Koehring Subsidiary)*
Newton, Iowa

25-ton truck crane service with Koehring 304

Maximum 110-ft. reach, with jib, and 25-ton lift capacity on rubber gives the Koehring 304 Truck Crane plenty of operating stability to handle big loads on wide work range. It quickly converts to heavy-duty clamshell, dragline . . . ¾-yd. shovel or hoe. 35 m.p.h. travel cuts non-productive time between jobs. 304 also is available on cruiser or crawler mounting. Other Koehring sizes up to 79½-ton lift, and 2½-yd. dipper capacities.

KOEHRING COMPANY
Milwaukee 16, Wis.

Y64

THE GENERAL OFFICES OF MERRITT-CHAPMAN & SCOTT CORPORATION ARE NOW LOCATED AT 260 MADISON AVENUE NEW YORK 16, NEW YORK ORegon 9-3500

To gear ourselves for still more efficient service to our clients, we have moved to a new home that will permit all headquarter departments to be brought together in quarters occupying the entire second floor of New York's newest office building.

The move—our first since 1903—provides consolidated, centrally located offices for our expanded scope of operations. Current work by M-C&S industrial, building, marine and heavy construction divisions extends from coast to coast, and overseas as far as New Zealand. Whatever your construction project... ashore or afloat, large or small ... let us show you how M-C&S can carry it through in minimum time, at minimum cost.

MERRITT-CHAPMAN & SCOTT
CORPORATION
FOUNDED IN 1860
CLEVELAND • BOSTON • NEW LONDON

Most important highway in the project is the BR-5 Niterói-Campos road, to be paved at a cost of $7.5 million. Thomas Marinho de Andrade Constructora S/A is doing the job.

Directing the entire program is Rubens Cerquera Gomes Caminha, director of the Highway Dept., State of Rio de Janeiro. President of the State Highway Council is Iágo José de Castro Valéiro.

The construction program is pointed at the eventual construction (including 3,200 km already built) of 5,000 km of roads, 2,000 first class and the remainder second class. The first-class roads would have minimum width of 13.5 meters, with a paved traffic ribbon 7 meters wide. Second-class roads would be 11 meters wide, with a hard-surface traffic ribbon of 5½ meters. In certain short strips where traffic density is great, as at the entrance to Niterói, the Highway Dept. is constructing roads with 4 paved lanes.

British steel plant grows despite uncertainties

Despite shifts in government that have made its status uncertain, the now-nationalized British steel industry is rapidly nearing its goal of boosting its output from 12,750,000 to 20,000,000 tons annually.

The program was launched in 1946—before a Labor Government nationalized the industry—and it has continued under financing by funds subscribed by the steel companies themselves and private investors. To date, nearly $840 million has been invested in the expansion; a like sum will be put in to complete the program.

U. S. firm to study Cuban hydro power

The National Agricultural and Industrial Development Bank of Cuba (BANFAIC) last week signed a contract with a U. S. consulting engineering firm for the study of possibilities of developing hydro power.

The New York consulting firm of Knappen, Tippetts, Abbett, McCarthy will make the study for the Cuban agency, agreeing to report within nine months on the feasibility of a plant that would be Cuba's first hydro unit.

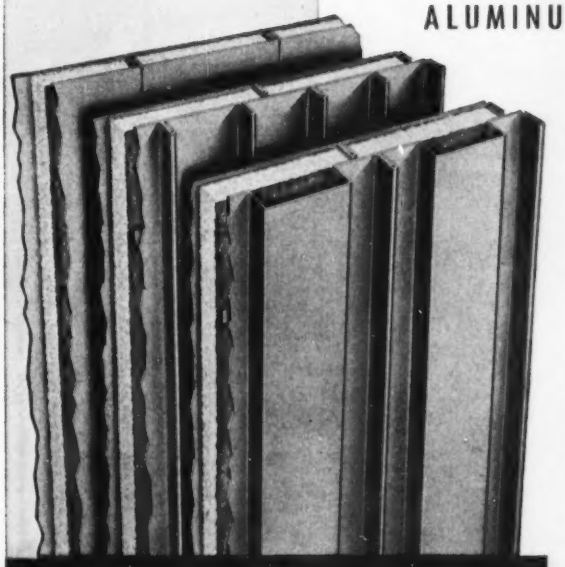
Under study is possible power available from three rivers—the Habanilla, Negro and Guanayara near the city of Cienfuegos, at about the center of the island. The proposed development would supply power for industries in the Cienfuegos area, and for future industrial expansion.

(*International continued on page 79*)

INSULATED METAL WALLS

for INDUSTRIAL and COMMERCIAL BUILDINGS

ALUMINUM, STAINLESS or GALVANIZED STEEL



FLUSH, RIBBED, or FLUTED
Over-all "U" Factor of Various Types is Equivalent to or Better than Conventional 16" Masonry Wall

Below you see the powerhouse of a completely new industrial plant in which over 225,000 square feet of Mahon Aluminum Insulated Metal Walls were employed on the exterior. 1,070,000 square feet of Mahon Steel Deck went into the construction of the roof on this same plant. Insulated Metal Walls are rapidly becoming standard construction for industrial plants in some of the world's largest industries. Among the advantages of this type of permanent wall construction are: light weight . . . lower cost in both material and labor . . . reduction in construction time due to rapid erection even in extreme low temperatures—and, an over-all "U" Factor better than a conventional masonry wall . . . these add up to a substantial saving in over-all building costs. Mahon Insulated Metal Walls are available in the three patterns shown at left. Each lends itself to individual architectural expression in design. The Mahon "Field Constructed" Fluted or Ribbed Wall can be erected up to sixty feet in height without horizontal joints—a feature of Mahon Walls that is particularly desirable in powerhouses or other buildings where high expanses of unbroken wall surface are common. See Sweet's Files for complete information and Specifications, or write for Catalog No. B-53-B.

THE R. C. MAHON COMPANY

Detroit 34, Mich. • Chicago 4, Ill. • Representatives in all Principal Cities

Manufacturers of Insulated Metal Walls; Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms; Rolling Steel Doors, Grilles, and Underwriters' Labeled Rolling Steel Doors and Fire Shutters.

MAHON

Lithographed on stone for U. S. Pipe and Foundry Co.
by John A. Noble, A.N.A.

LARGE DIAMETER cast iron pipe, as illustrated, are efficiently serving as water, gas or sewer mains in large cities throughout the country. If this were a water supply line or an intercepting sewer, either bell-and-spigot or mechanical joint pipe might be used; however, for a gas feeder main these days it would most likely be mechanical joint.

Our pipe 30-inch and over, flexible joint and integral flange pipe are all made by the pit cast process. Pipe in sizes 2-inch through 24-inch are cast centrifugally in metal molds with bell-and-spigot, mechanical joint or plain ends. No matter whether pit cast or centrifugally cast, the quality of our pipe is scientifically controlled throughout its manufacture.

United States Pipe and Foundry Co.,
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Plants and Sales Offices Throughout the U. S. A.

U.S.
cast iron
PIPE
FOR WATER, GAS, SEWERAGE AND INDUSTRIAL SERVICE

Russia pushes work on Kuibyshev hydro

Important progress on Russia's 2,100,000-kw Kuibyshev hydroelectric project—designed to exceed the capacity of U. S. installations at Grand Coulee and Boulder dams—is heralded in Soviet publications.

According to those sources, foundation pits for power installations are nearly complete, and concrete is being put down in some parts of the power station foundations. Work is proceeding behind a coffer-dam that projects 450 yards into the main stream of the Volga River.

Meanwhile, an estimated 38,000,000 cu yd of earth to be moved at the project site this year—most of it by electric suction dredges especially designed for the work.

The dam proposed to block the Volga's flow will be three miles long, and will raise water level behind it by 85 ft. A series of locks on the left bank of the river will pass river navigation.

Energy produced will be sent to industries in Moscow, Saratov and Kuibyshev itself. Irrigation water will be provided for more than 2,000,000 acres.

International briefs . . .

• **Low on Philippine dam**—Morrison-Knudsen International Corp. was the lower of two bidders on the $20.8-million Ambuklao Dam on Luzon Island, to be built for the National Power Corporation of the Philippines. The dam—said to be largest ever advertised in the Far East—will be an earth and rockfill structure, 131 meters high, 426 meters long at crest, with a maximum width of 565 meters at the base. Also included will be three diversion tunnels, an underground power station and other work. The job is to be completed early in 1955.

• **Heliport for London?**—A revised plan for a helicopter port over the junction of the Charing Cross railway bridge and Victoria Embankment in the heart of London has been submitted to the government. Cost is estimated at about $14 million. Planned are a landing platform atop a series of nine-story buildings.

• **Tokyo aviation center**—An eight-story aviation center in the heart of Tokyo—including a rooftop heliport—is now under construction, supervised by Japanese engineers and contractors. The reinforced-concrete structure will house airline offices, ticket offices and other facilities.

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Which of these will hit your company next?

The embezzler, the hold-up man, the burglar or thief, the forger . . . any *one* of these can play havoc with your business.

Perhaps you already have individual policies to protect your money and securities against one or more of these hazards . . . perhaps *all* of them.

But if you're smart, you'll go one step further. You'll make sure all these risks are covered by *one* policy.

Why is that so important?

Because when all such risks are covered in *one* policy . . . a Comprehensive Dishonesty, Disappearance and Destruction Policy . . . you avoid the problem of divided responsibility. You need not always prove the exact cause of loss. You can collect for your losses faster and easier, especially when there is a question as to whom or what was responsible.

Ask your Hartford Accident and Indemnity Agent or your insurance broker to tell you more about the Hartford "DDD" policy. Or write us for full details. You'll never regret it.

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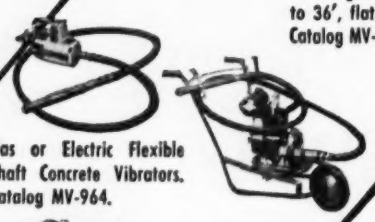
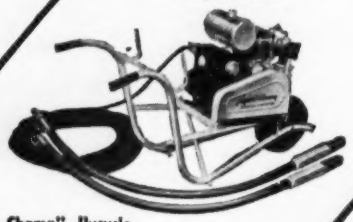
FOR FASTER WORK AND TROUBLE-FREE SERVICE

Now easy-to-operate scientifically balanced Gas or Electric TURN-A-TROWEL. Size 34" or 48". Catalog MV-939.

New Concrete Vibratory Finishing Screed, sizes 6' to 36', flat or arc crown. Catalog MV-942.



Gas or Electric Flexible Shaft Concrete Vibrators. Catalog MV-964.



"Master Champ" Hycycle Vibrator, 10,300 RPM. Catalog MV-992.

Portable Gas-Electric Generator Plants, 500 to 17,000 watts. Catalog MV-985.

Trouble-free, "Power-Blow" Electric Hammer and Spade. Catalog MV-981.

Gas or Electric Backfill Tampers. Catalog MV-699.

New Superfast Master Space Heaters, 140,000; 231,000 and 390,000 BTU per hour. Catalog MV-1045.

See your dealer or write for details TODAY!

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MASTER

BETTER PRODUCTS FOR BIGGER PROFITS

OBITUARIES

Gustave Andreen, 72, a civil engineer with Madigan-Hyland and a specialist in structural steel design, died in New York on Dec. 23d. He had worked on many projects such as the proposed Tappan Zee Bridge and the N. Y. State Thruway. During World War II Mr. Andreen was on the staff of the late Rear Admiral Frederic Harris, USN.

Stephen C. Mitchell, 79, a Massachusetts Transit Authority civil engineer for 52 years, died Dec. 15 in West Roxbury, Mass. He joined the MTA in 1898 after graduation from Tufts College and retired in 1950.

Robert C. Wilson, 68, a retired civil engineer, died Dec. 14 in Asbury Park, N. J. Mr. Wilson was on the engineering staff of the Holland Tunnel, New York, during its construction.

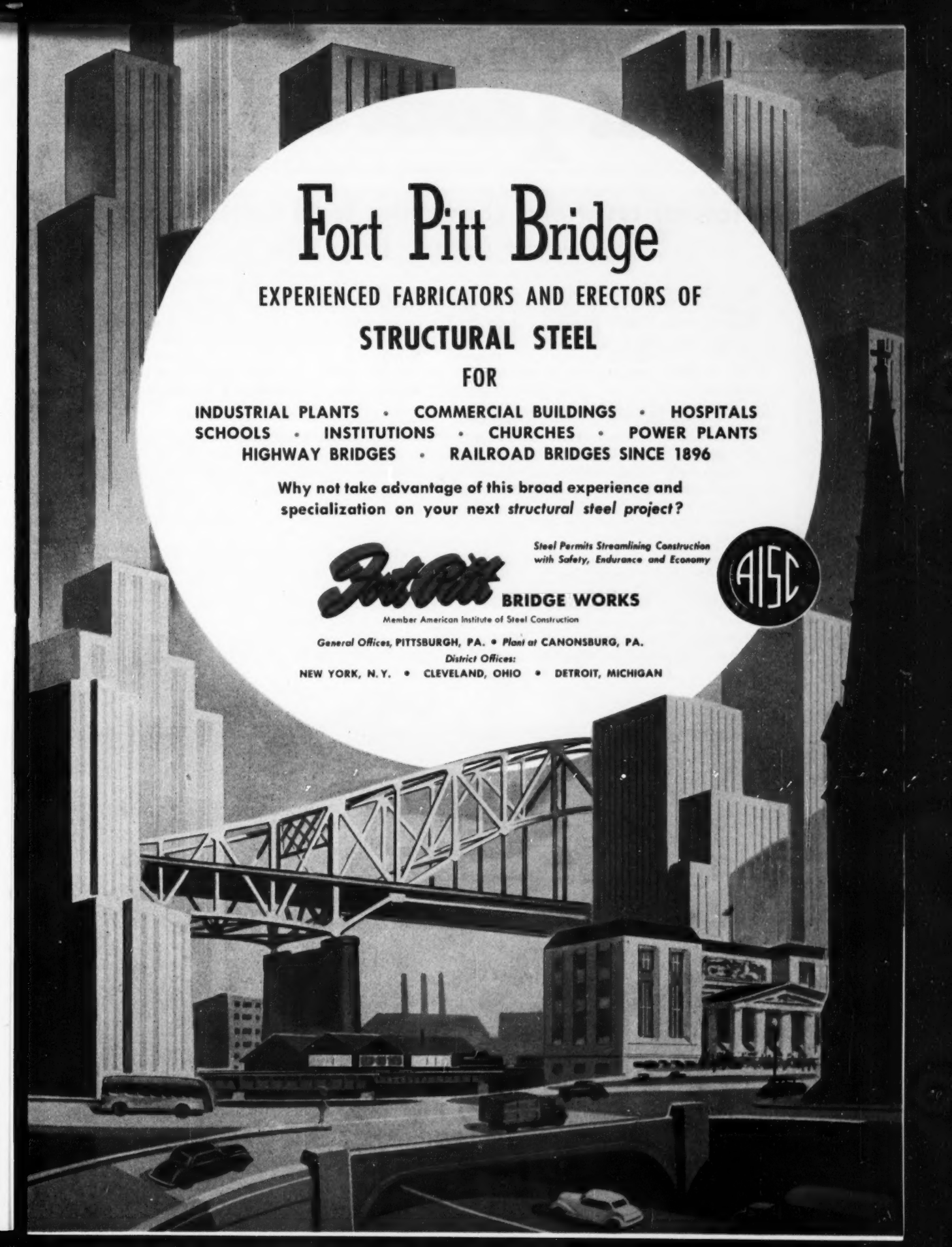
John W. Moore, 87, a specialist in municipal engineering, died Dec. 22 in Indianapolis. A graduate of Butler University, he was a past president of the Indiana Section of the American Water Works Association. Mr. Moore designed the water works systems in many Indiana communities, such as Ft. Wayne, Plymouth, and Huntington.

James L. Rippey, 81, assistant chief civil engineer of the Milwaukee Road until his retirement 10 years ago, died in Chicago on Dec. 26. He had been with the railroad for 25 years and before that he served as chief engineer for Eastern coal companies. Mr. Rippey had developed a system for handling coal as it comes from the mines.

D. R. S. Frazier, 54, city engineer at Shelby, N. C., died Dec. 27. He obtained his civil engineering degree from North Carolina State College, and in addition to serving as city engineer, he also served as county engineer for Cleveland County.

Robert M. Cooksey, 71, since 1923 city manager of Thomasville, N. C., died Dec. 28. He had served as vice-president of the International City Managers Association, president of the North Carolina League of Municipalities, and as president of the North Carolina City Managers Association. He was educated at Baltimore Polytechnic Institute. For several years he was with the city engineering department at Baltimore, and in 1918 and 1919 was a major in the construction division of the Army.

(*Continued on page 84*)


Fort Pitt Bridge
EXPERIENCED FABRICATORS AND ERECTORS OF
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When the heat is on...

that Pioneer Edge

Pioneer crushers, conveyors feed Southwest's biggest rotary lime kiln

Here, just south of Cleburne, Texas, is one of the world's most remarkable lime-producing plants. With its unique system of preheating and a huge 130 foot rotary kiln, Limestone Products Company is turning out excellent quality lime at surprisingly low cost.

It was natural that the designers of this big, modern plant should choose PIONEER equipment for the important job of keeping it supplied.

Beginning in the quarry, a 12′ PIONEER traveling grizzly receives the rock, feeds it evenly to a 24″x36″ PIONEER jaw crusher which, with 75% crushing, has a capacity of 100 t.p.h.

An inclined conveyor and an overhead shuttle conveyor then stockpile the product. Later, an 18″ belt conveyor reclaims it from a 125′ tunnel and discharges it into waiting trucks for haulage to the lime plant. All three conveyors were made by PIONEER.

At the plant, stone is quickly reduced to minus 1½″ by a 30″x18″ PIONEER roll crusher (located under the unloading ramp shown at the left of the photo), then elevated by an inclined PIONEER belt conveyor to a double-deck PIONEER vibrating screen. Another short PIONEER inclined elevator whisks stone to a second PIONEER screen which drops material into open storage piles below.

Stone is reclaimed from these piles through bin gates in the roof of a long underground tunnel, conveyed to a bin above the preheater for burning . . . or to the pulverizing plant for conversion to agricultural limestone, cattle feed, and roofing and asphalt filler.

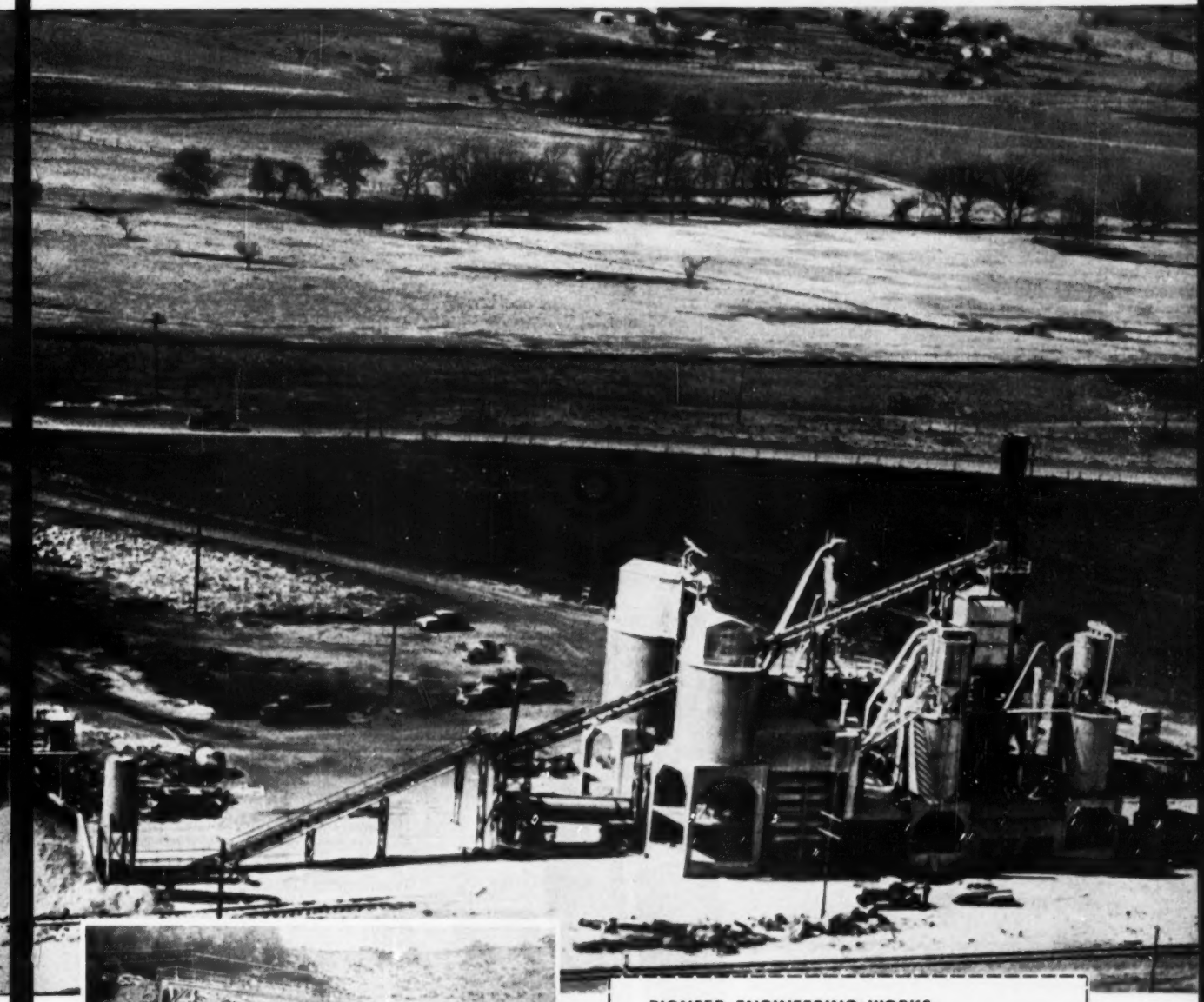
Once again, superior design and rugged construction have enabled PIONEER to deliver the goods . . . efficiently, economically, reliably . . . another instance where the PIONEER EDGE has lowered operating costs while helping an experienced operator produce a superior product.

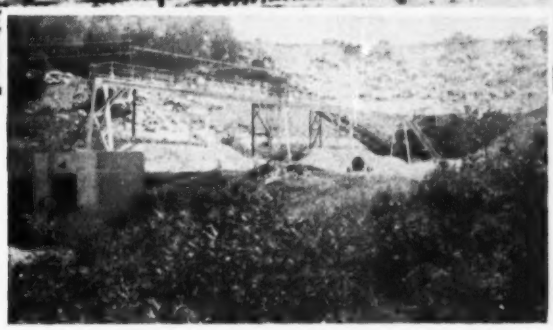
BUY BOTH!
HIGHER OUTPUT
LOWER UPKEEP

Pioneer

Continuflo EQUIPMENT

delivers lime on time





Source of limestone is this quarry, located 16 miles from the Cleburne lime plant. Here the stone is crushed, stockpiled, reclaimed, then loaded into trucks at the tunnel mouth shown at left.

PIONEER ENGINEERING WORKS
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• Please send information on the equipment checked.

- ☐ GRAVEL PLANTS
- ☐ ROCK PLANTS
- ☐ JAW CRUSHERS
- ☐ ROLL CRUSHERS
- ☐ WASHING PLANTS
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- ☐ MECHANICAL FEEDERS
- ☐ VIBRATING SCREENS
- ☐ BUZZER SCREENS (LIGHT DUTY)
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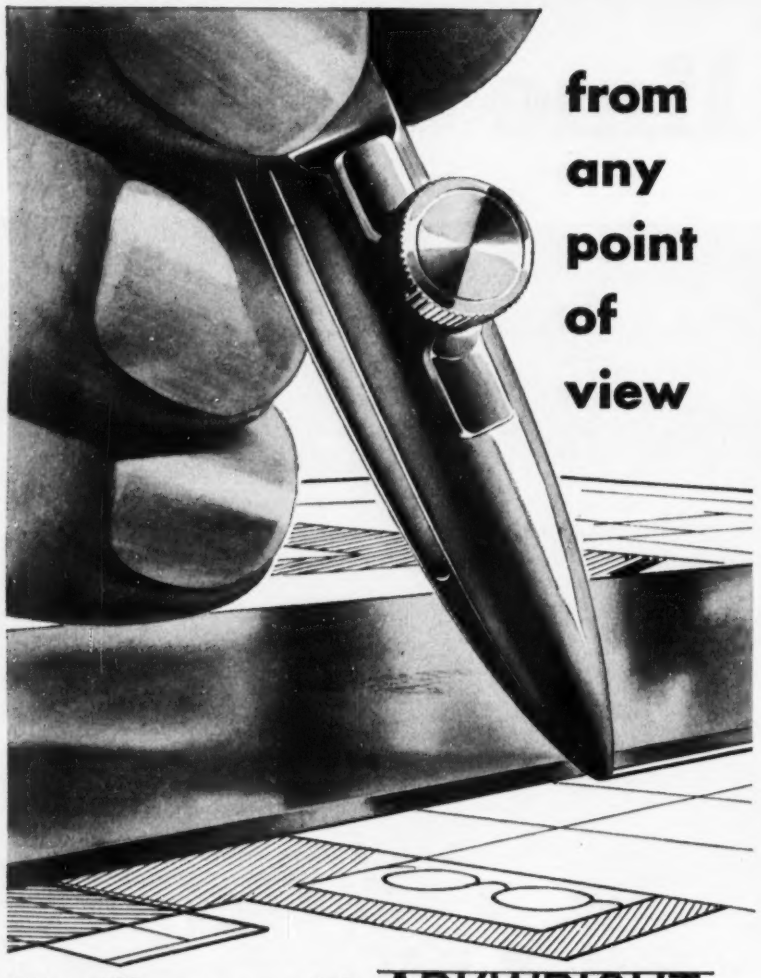

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OBITUARIES

Alexander Carroll, 74, until he retired five years ago, vice-president of the Dunbar Co., Cleveland, building firm, and with the company for 40 years, died Dec. 25. He helped rebuild Andrew Carneige's Skibo castle. He also was connected with work on several other castles in his native Scotland. In 1905 he left Scotland and came over to the United States.

Herbert L. Cooper, 62, retired California division of highways maintenance engineer, was killed in an automobile accident near San Ardo, Calif., Dec. 29.

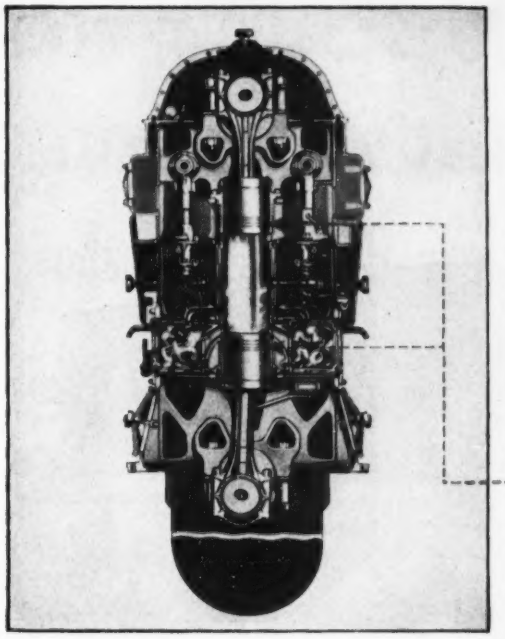
A graduate of Lehigh University in 1913 as a civil engineer, Cooper's state service began in 1925 as resident engineer in San Bernardino. Later he was resident engineer in Eureka and San Luis Obispo. In 1945 he was assigned to the headquarters maintenance department in Sacramento to supervise experimental work to reduce costs and perform more efficient maintenance work.

J. Warren Fortenbaugh, 68, sanitary engineer for the Erie County Penitentiary and Home & Infirmary, died on Dec. 20 in Buffalo, New York. He was graduated from Pennsylvania State College in 1912. He worked for the Harrisburg Health Department before joining the Kaustine Co., Inc., in Buffalo. He was a member of the Buffalo Sewer Authority in 1936 and 1937 and had held his present county post for seven years.

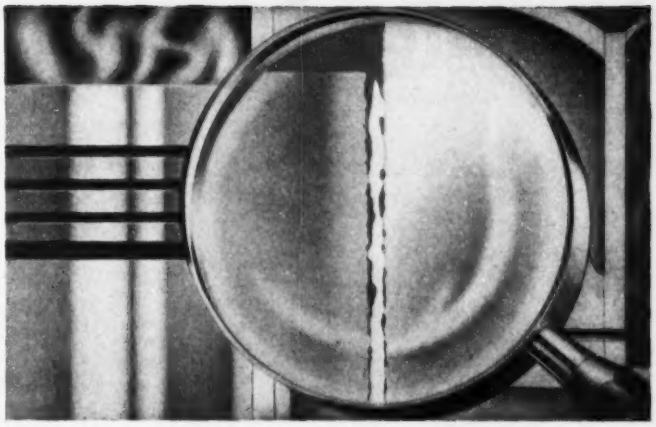
A. J. Wilcox, 62, a partner in the consulting engineering firm of Wilcox & Erickson, died in N. Y. City, Dec. 14. He received his engineering education at Purdue and Valparaiso universities. He designed the steel structures and foundations for several important buildings in New York City and Washington, D. C.

Ralph W. Loud, 76, retired assistant chief engineer, sewerage division, Metropolitan District Commission, Boston, died at Arlington, Mass., Dec. 14. He was graduated from the Massachusetts Institute of Technology in 1899 and retired in 1946 after he had been associated with the Metropolitan District Commission for a period of 40 years.

Frank E. Davidson, 67, a civil engineer for the Cleveland Transit System, died in Cleveland, Ohio, Dec. 29. He started his career with the Pennsylvania Railroad, and went to the engineering division of the Cleveland utility in 1914.

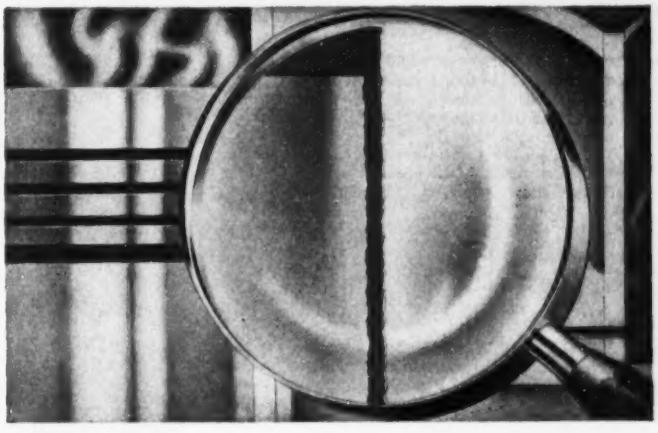


←That demon friction... not only at the points indicated here, but with all moving parts throughout any engine . . . can steal up to 50% of the power produced by your fuel.



↑ *Drawing above* illustrates how inferior diesel oils . . . oils with weak film strength and less free-flowing qualities . . . provide insufficient lubrication and set up friction points.

↓ *Shown below* is the complete coverage Cities Service D-C Oils provide. They provide a strong, adequate oil film, a positive seal between piston rings and cylinder walls.



POWER LOSS DUE TO FRICTION must be held to a minimum

Much of the power generated by any motor fuel is wasted in overcoming friction. But this loss must, and can be held to a minimum with the proper lubricants . . . Cities Service Diesel Lubricants.

With exceptionally high film-strength and free-flowing qualities, Cities Service Diesel Oils provide a perfect oil film between all moving parts and thorough lubrication of the most intricate diesel mechanisms under severest operating conditions. They reduce power-stealing friction to the barest minimum.

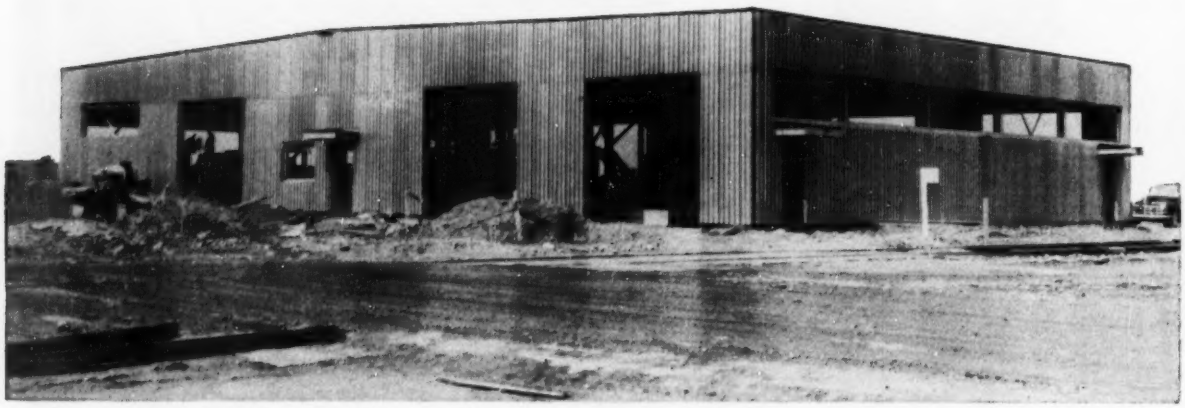
Be sure you're getting all the power your diesels were designed to give. Use the complete line of Cities Service D-C Oils. Ask your Cities Service Representative, or call the office nearest you.

CITIES SERVICE DIESEL OILS ALSO:

- **Minimize wear under all conditions.**
- **Provide a positive seal between piston rings and cylinder walls.**
- **Serve as a coolant to fight heat.**
- **Clean as they lubricate.**

CITIES SERVICE

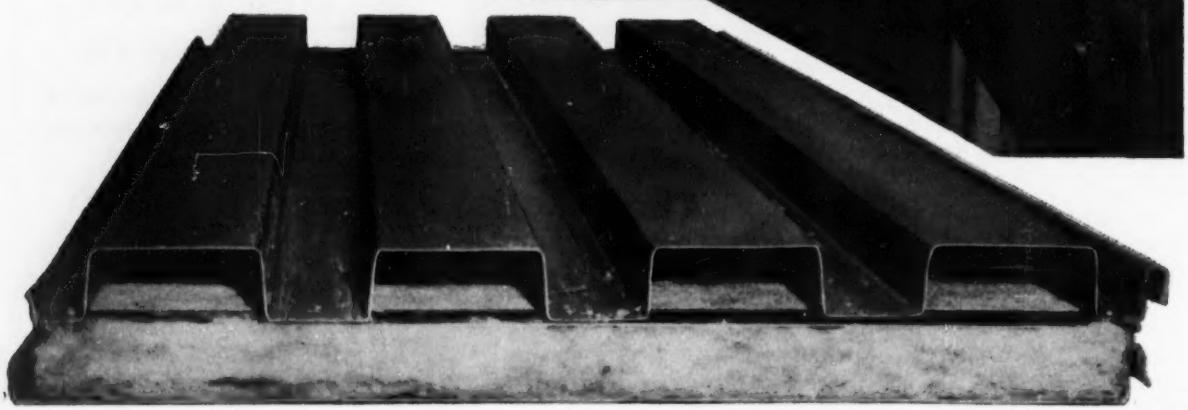
Insulated panels of U·S·S 17 (Type 430) mean fast, low-cost



WORKING UNDER ADVERSE WEATHER CONDITIONS, a crew of four installed 4005 square feet of insulated Stainless Steel panels on this building in less than eight working days. The panels were manufactured by H. H. Robertson Co., Pittsburgh, Pa.; installed by R. A. Steelman Co., Trenton, N. J.; architects were Walter Kidde Constructors, Inc., New York.

PANELS WERE INSTALLED by spot welding to the structural steel framework. Their light weight makes handling by a minimum crew possible.

CROSS SECTION of a complete panel for the fire station at United States Steel's Fairless Works shows the formed Stainless Steel exterior sheet, 1½" of insulation and the coated steel interior.



Stainless Steel construction at Fairless Works

4005 sq. ft. of panels installed by crew of 4 in 8 working days

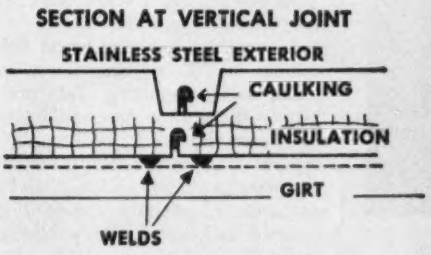
CONSTRUCTION with insulated building panels of U·S·S 17 (Type 430) Stainless Steel is gaining considerable momentum in the field of industrial building—such as power plants, factory office buildings, warehouses, etc. Architects and owners alike have been quick to recognize the advantages of light panel weight, long building life, minimum maintenance, low labor costs and fast erection in any type of weather.

The building shown here is a Stainless-panelled fire station at the new Fairless Works of United States Steel Corporation at Morrisville, Pa. The 66′ x 100′ structure contains 4005 square feet of insulated panels of 20 gage U·S·S 17 Stainless Steel.

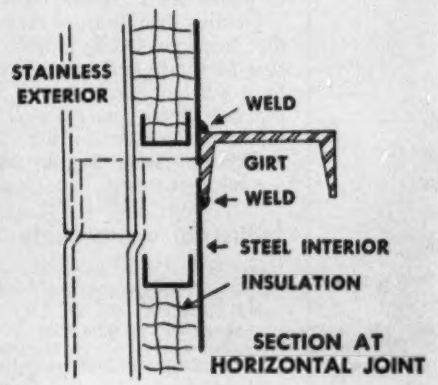
A crew of four men erected the panels under adverse weather conditions in less than eight working days. The panels, consisting of U·S·S 17 (Type 430) Stainless Steel exterior, 1½" of insulation and a coated steel sheet interior, were attached to the structural steel framework by spot welding, a fast and strong method of installation. U·S·S 17 (Type 430) is readily available without CMP tickets.

Note the cross-sectional sketches of the horizontal and vertical joints. As indicated in the sketches, caulking is applied to the vertical joints prior to erection. This provides an excellent vapor seal and is therefore instrumental in reducing the over-all "U" factor. The cross section of the vertical joint illustrates how the lower panel is counter sunk to gain a tight flush joint at the lap.

A new book containing the latest information on construction with panels of U·S·S 17 Stainless Steel is now being distributed. For your copy, use the coupon below.



THESE DETAILS of panel cross sections show methods of making horizontal joint (below) and vertical joint (above). Such methods of joining, combined with the low" U" factor designed into these panels, produce an exceptionally well insulated building.



United States Steel Corporation
525 William Penn Place, Room 2808-F
Pittsburgh 30, Pa.

☐ Please send me your new booklet on U·S·S 17 Stainless Steel for industrial buildings.

☐ Please arrange to have fabricators of Stainless Steel wall panels send me literature on their particular type of construction.

Name.....Title.....

Address.....

City.....State.....

United States Steel produces only the Stainless Steel sheet and strip from which panels of this type are made; the panels themselves are fabricated by a number of our customers.

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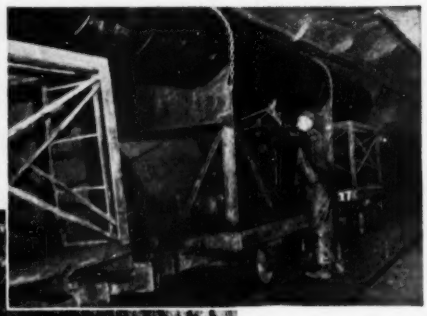

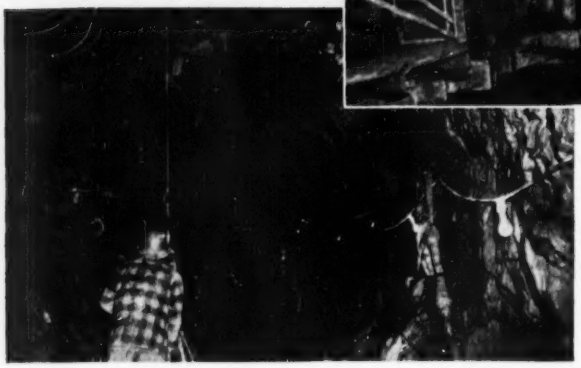

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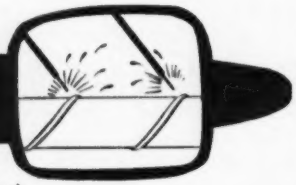
For the facts, write for Bulletins No. 507, No. 513 and No. 514.



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BOOKS

Engineered environment

ENGINEERING IN PUBLIC HEALTH—By Harold E. Babbitt. 582 pp. McGraw-Hill Book Co., New York 36, N. Y. $8.

This is the latest addition to the publisher's civil engineering series, on which Prof. F. T. Mavis is consulting editor. It follows volumes on foundations, hydrology, and soil mechanics and is a text for the engineer in public health.

The book is another outgrowth of Professor Babbitt's lecture notes developed for graduate students at the University of Illinois—as was his earlier "Sewerage and Sewage Treatment." It is intended basically for those with a civil engineering background, although anyone concerned with problems of environment should find the volume useful.

In covering the very broad field of public health—epidemiology, pesticides, milk, plumbing, industrial hygiene—the author necessarily touches lightly on the strictly civil engineering aspects of subjects encompassed. Water, sewage, stream pollution and such problems of sanitary engineering are covered only from the public-health angle.

Yet the author in his preface disclaims any intent to call his subject public-health engineering. He wishes to avoid partisanship in the nomenclature controversy: sanitary engineering vs. public-health engineering.

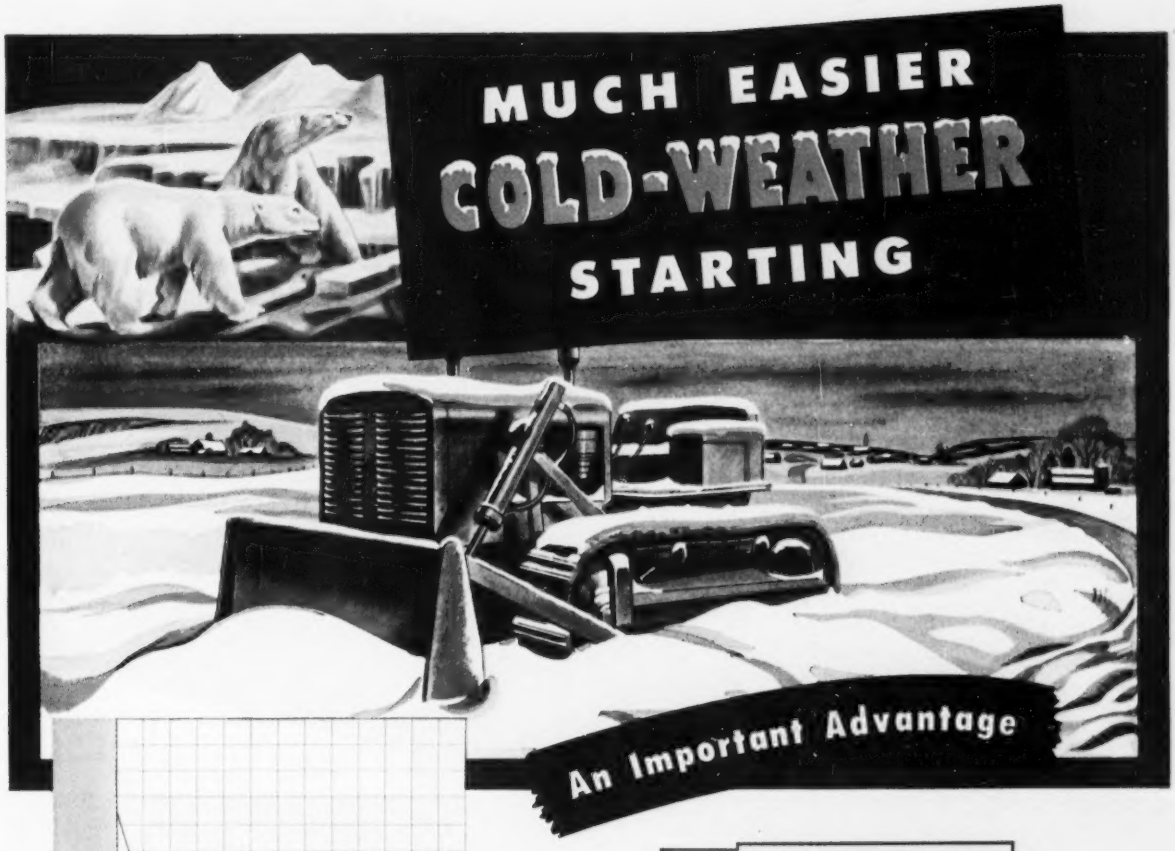
Quoting definitions of these two by the American Public Health Association, he admits at the outset there may be a difference in emphasis between the two—then goes on with his emphasis on the latter, on administration and control rather than on design and construction.

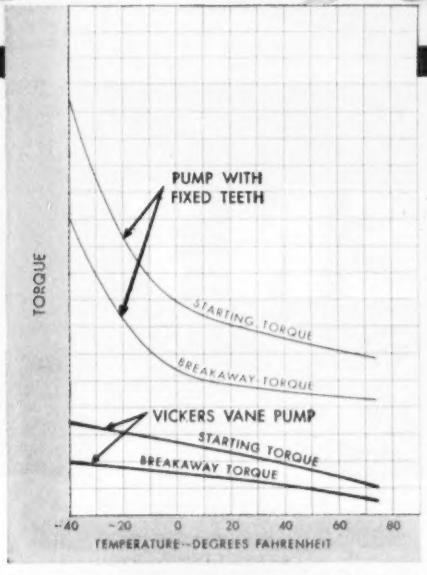
Industrial waste guide

INDUSTRIAL WASTE TREATMENT—By Edmund B. Besselievre. 391 pp. McGraw-Hill Book Co., 330 W. 42nd St., New York 36, N. Y. $7.

A guide for the man with the industrial waste problem, this should be a useful book to plant engineers, consultants to industry, and public health officials. It is also recommended to the student who sees industrial waste treatment as a specialized, but growing branch of sanitary engineering.

Early chapters of the book are directed to the industrialist. They tell him what a waste problem is (nuisance or health hazard); how he'll know when he has one (someone will complain); and what to do first to solve





Curves based upon comparative tests of a Vickers Vane Type Pump and one with fixed teeth of equal capacity. Oil used complied with Army Spec. 2-79-B.

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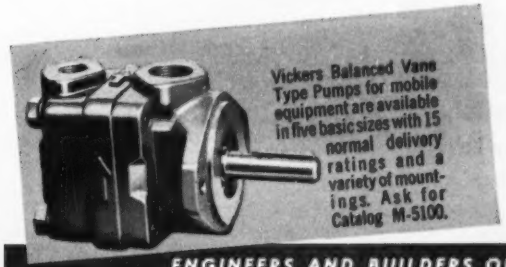
Cold weather imposes a double handicap in starting. All engine parts tend to be stiffer, and the power of the starting battery is greatly diminished. In vehicles furnished with power hydraulic equipment, the starting load may be seriously increased when a pump with fixed teeth or lobes is directly connected to the engine.

Vickers Balanced Vane Type Pumps do not have this effect. At rest and at normal starting speeds, the sliding vanes are retracted . . . only after the engine fires do the vanes extend and pumping begins. The result is that Vickers Vane Type Pumps make cold weather starts much easier.

For further information, get in touch with the nearest Vickers office listed below.



Vickers Balanced Vane Type Pumps for mobile equipment are available in five basic sizes with 15 normal delivery ratings and a variety of mountings. Ask for Catalog M-5100.

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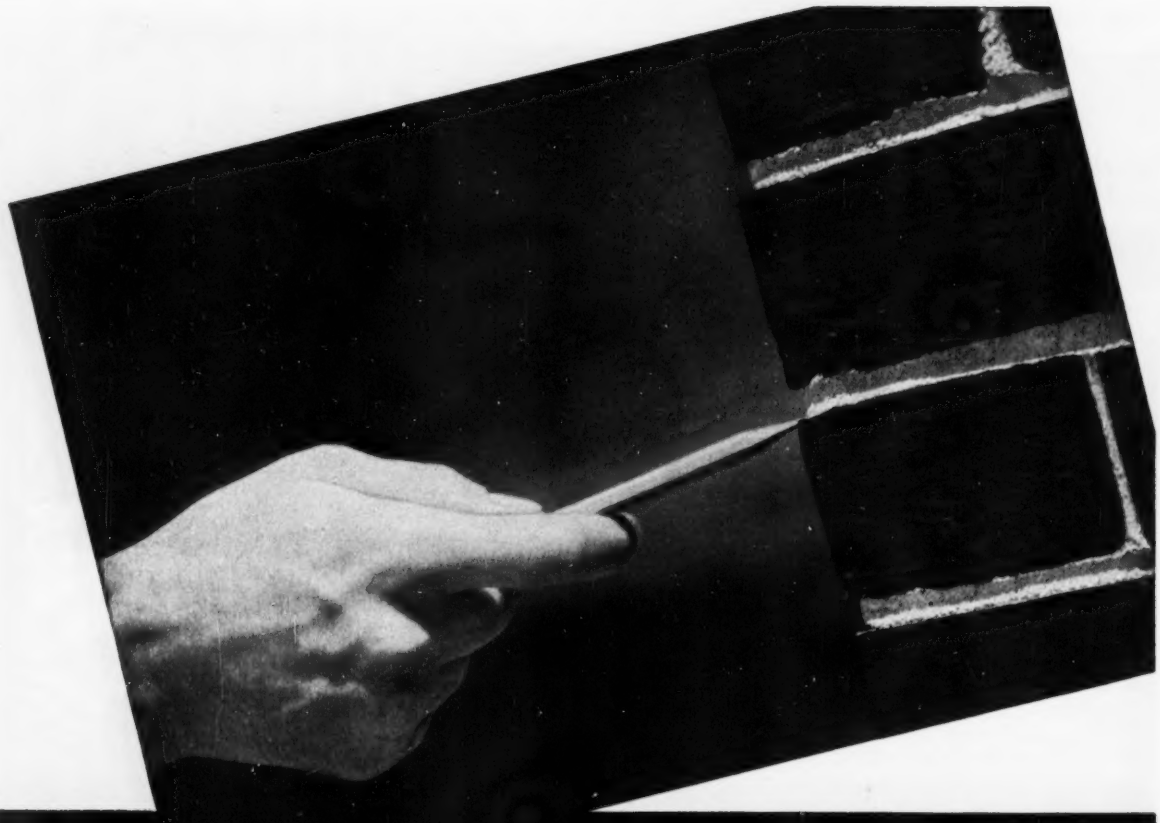

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FOR permanent strength and beauty, mortar must be *durable* — must be able to withstand the alternate freezing and thawing to which it is subjected many times each winter.

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it (hire an engineer or specialist).

Mr. Besselievre claims that industrial waste treatment has existed as a science only for the last decade, and therefore, industry will not find many available experts to hire. More of these will be found in research and in industry itself then in engineering firms, he says.

Subjects covered include authority-owner-engineer relationships, methods of sampling and analysis, specific treatment processes described complete with flow diagrams, and selection of equipment. (Is should be noted here that the author is chief sanitary engineer in international sales for The Dorr Company.)

An 8-page listing of population equivalents for various types of industrial wastes is included in a chapter on pollutional effects. Appendices include provisions of the Water Pollution Control Act of 1948, plus a review of state regulations pertaining to industrial waste discharge.

Reports and Pamphlets

DESIGN OF NAILED STRUCTURES—Engineering Experiment Station Series No. 81, Virginia Polytechnic Institute, Blacksburg, Va.

HIGHWAY RELATIONSHIPS IN MARYLAND—Special Report 6, Highway Research Board, Washington 25, D. C. 75 cents.

FINAL REPORT ON ROAD TEST ONE-MD—Effect of Controlled Truck Axle Loadings on Concrete Pavement—Special Report 4, Highway Research Board, Washington 25, D. C. $2.25.

CONDENSATION CONTROL IN BUILDINGS: As Related to Paints, Papers and Insulating Materials—Research Conference Report No. 4, Building Research Advisory Board, National Research Council, Washington 25, D. C. $3.50.

CALCIUM CHLORIDE IN CONCRETE—Bibliography 13, Highway Research Board, Washington 25, D. C. 60 cents.

INDUSTRIAL WASTE INVENTORY—Report No. 1, Interstate Sanitation Commission, 110 William Street, New York 38, N. Y. 15 cents.

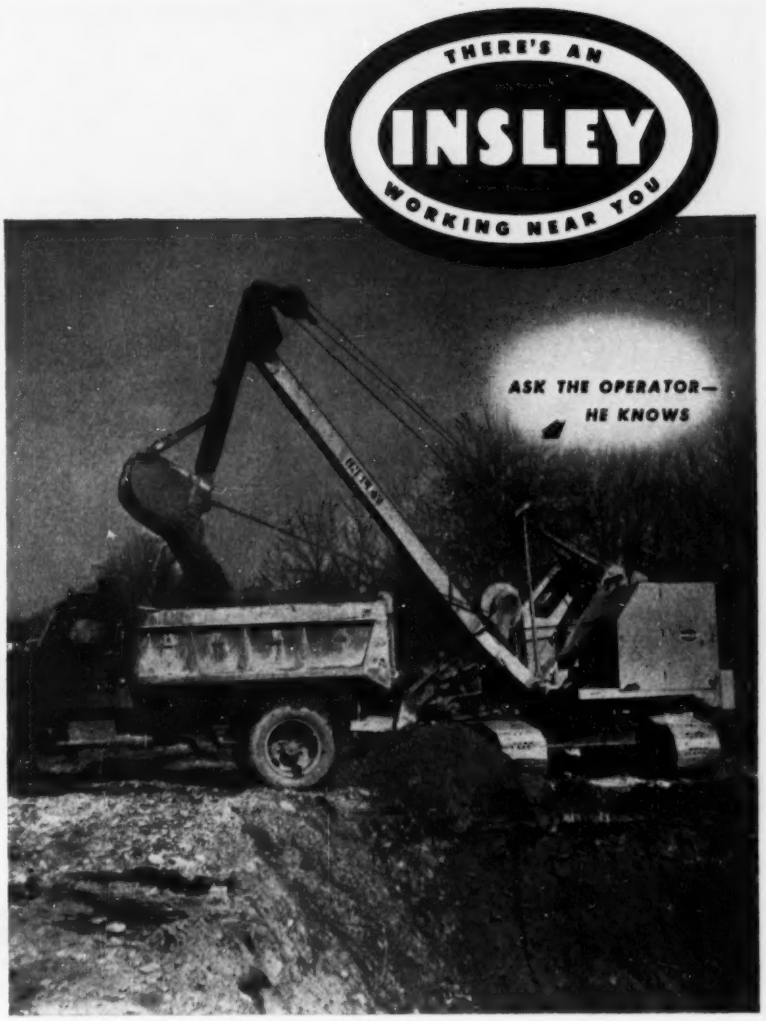
THE SILTING OF LAKE SPRINGFIELD—Report of Investigation No. 16, Illinois Water Survey Division, Springfield, Ill.

SANITATION PRACTICES IN LOCAL HEALTH DEPARTMENTS, 1951—American Public Health Association, 1790 Broadway, New York 19, N. Y.

MANUAL ON UNDERGROUND CORROSION—Columbia Gas System Service Corp., 79 North Third St., Columbus 15, Ohio. 75 cents.

LIST OF PUBLICATIONS AND REPORTS—Soil Conservation Service, U. S. Dept. of Agriculture, Washington 25, D. C.

STUDY OF CONSERVATION IN BUILDING CONSTRUCTION—Building Research Advisory Board, National Research Council, Washington 25, D. C. $3.50.



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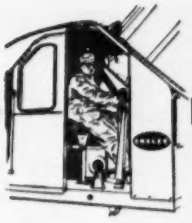

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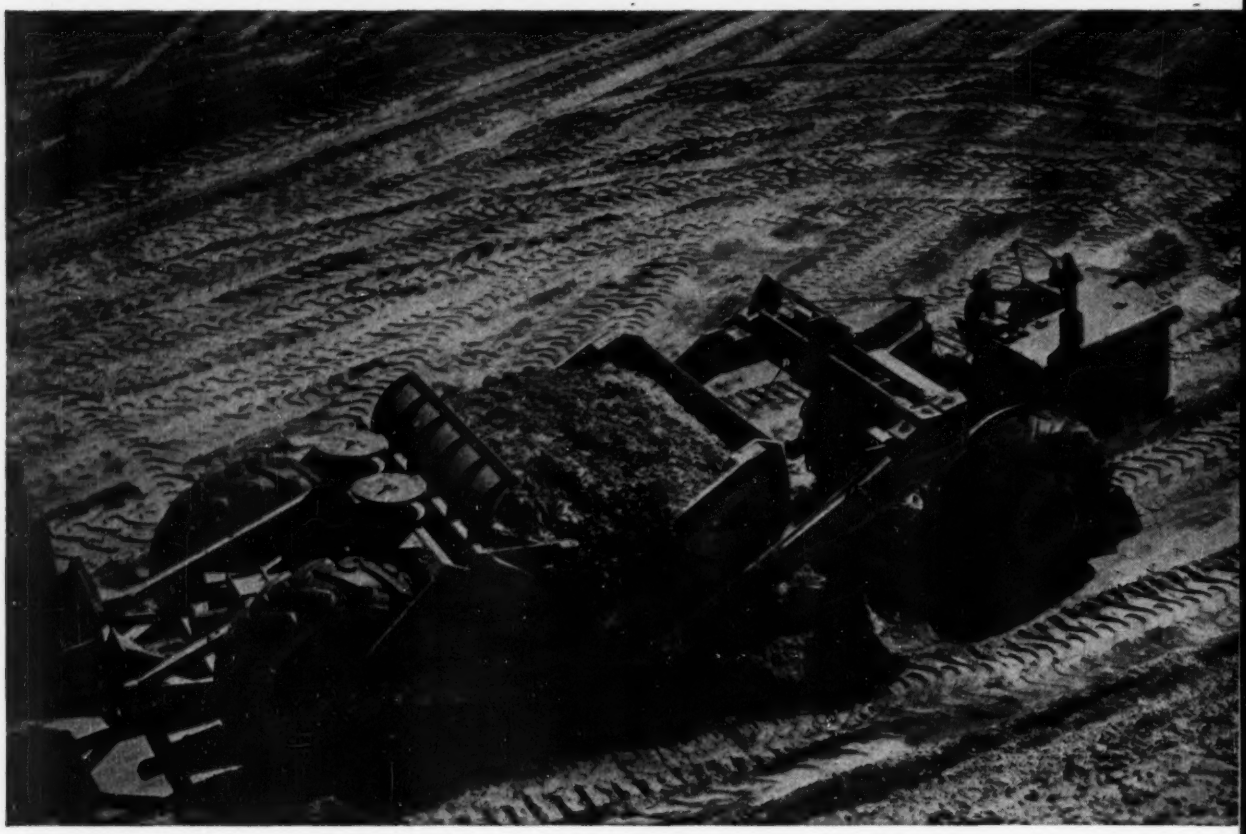
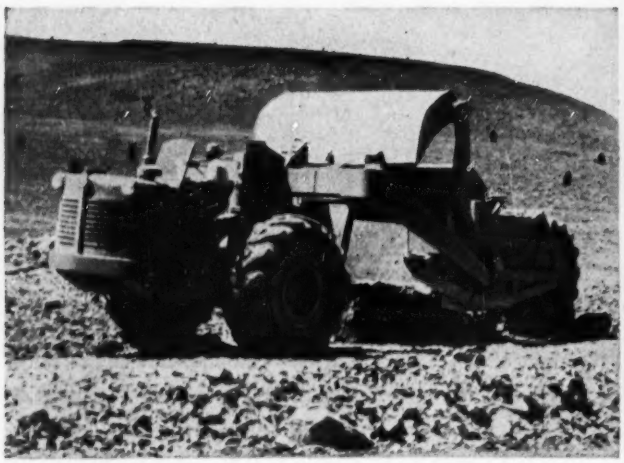
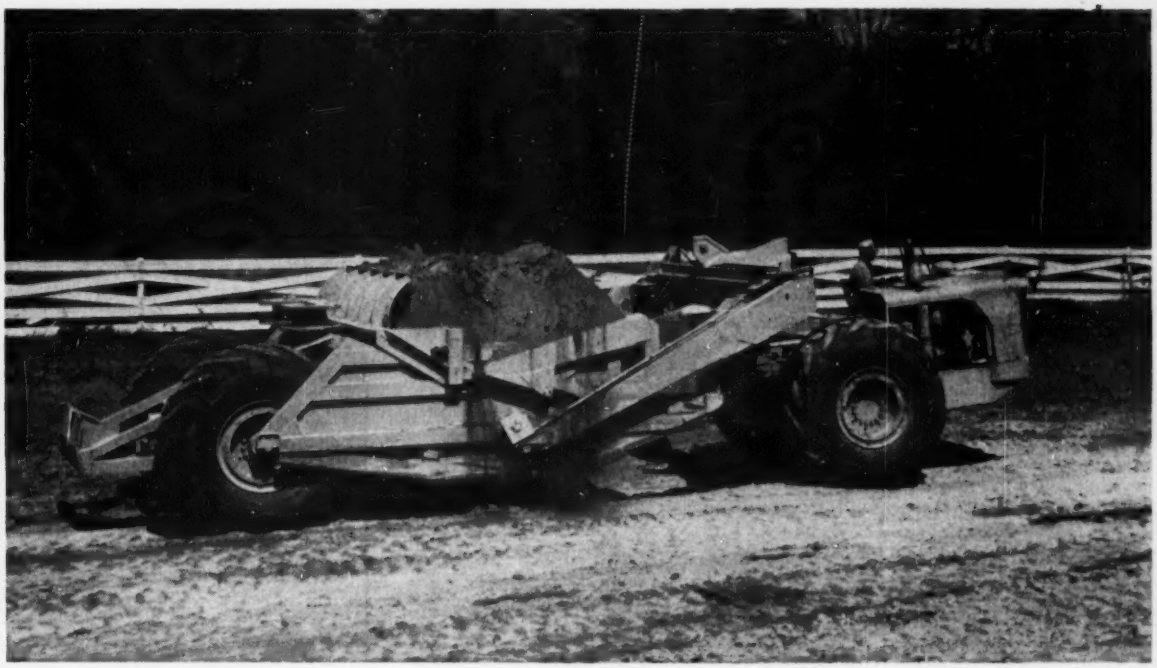


How Allis-Chalmers MOTOR SCRAPERS Help Cut Cost per Yard



Positive, forced ejection . . . eliminates wasteful circling or other time-consuming methods of removing the load. Allis-Chalmers' patented forced-ejection system plus high apron lift *bulldozes* dirt out of the bowl fast every trip . . . without extra wear and tear on power control unit cables and clutches.

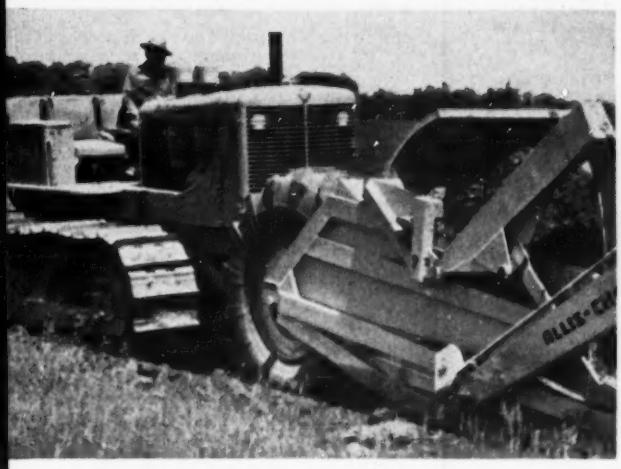
Easy operation. From foam rubber seat to finger-tip control, shock-free hydraulic steering and full visibility, a TS-300 operator has every available help for safe, sure, speedy work. Balanced weight distribution and low center of gravity make A-C MOTOR SCRAPERS easy to maneuver even at top speed.



Faster, easier loading . . . because A-C MOTOR SCRAPERS have up to 20 hp. to handle every struck yard . . . plus offset cutting edges and "center-boiling" loading action that spills the dirt evenly, filling corner voids for full capacity loads.

High-speed hauling. The power behind the TS-300 teams up with big, traction-type tires that gear it to the road . . . move capacity loads at 22.5 mph. And operating clearance of 20 in. helps keep it from hanging up on rutted haul roads.

by Cutting Time per Yard



A dirt-moving "package" that makes every second count. The powerful HD-20 torque converter tractor is an ideal teammate for the TS-300. It synchronizes to scraper speed at contact . . . automatically loads at fastest speed conditions permit with less strain on operator and equipment . . . gives scraper an extra fast start to the fill.

Your nearby A-C dealer will be glad to give you more yardage-boosting facts about job-tested, *job-proved* MOTOR SCRAPERS. He can also tell you where you can see them at work and talk to the men who own and operate them. You owe it to yourself to call or stop in soon.

TS-300 MOTOR SCRAPER	TS-200 MOTOR SCRAPER
14 cu. yd. struck capacity	10 cu. yd. struck capacity
18 cu. yd. heaped capacity	13 cu. yd. heaped capacity
280 hp. Buda diesel or	176 hp. Buda diesel or
275 hp. Cummins diesel	165 hp. Cummins diesel

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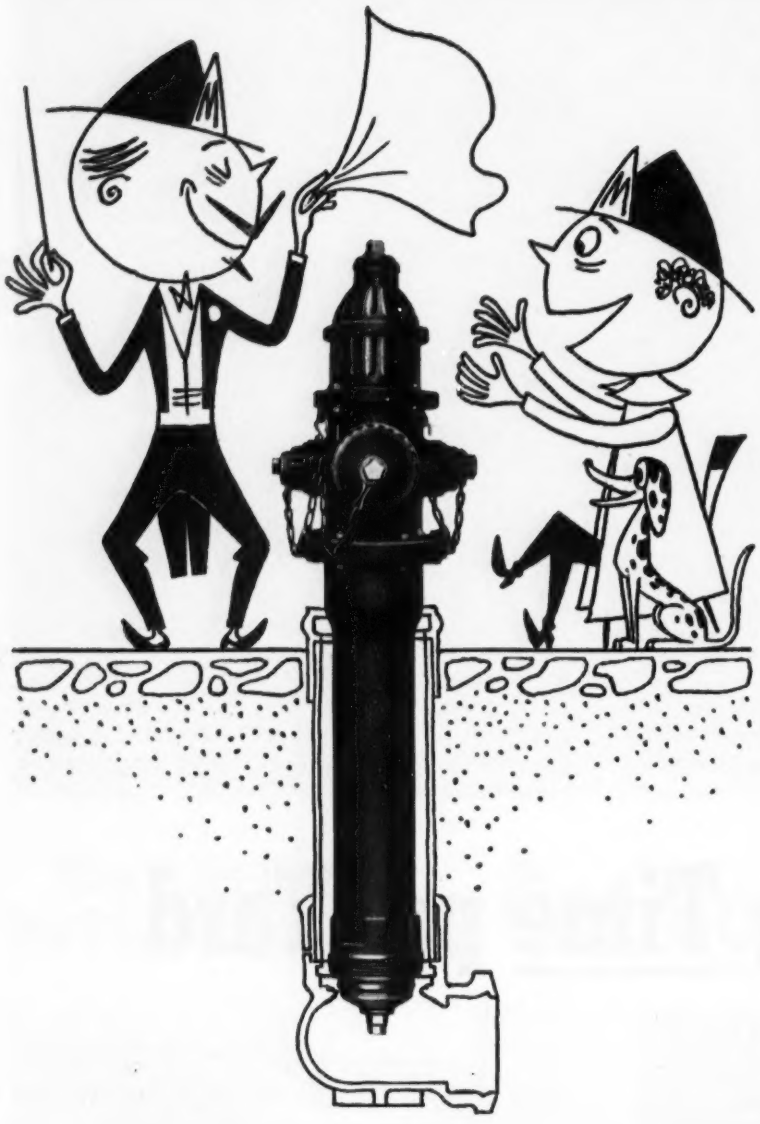

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- The barrel, containing all the working parts of the hydrant, is readily removed for inspection or for repair by simply unscrewing from the elbow and withdrawing from the protection case. *No excavating.*

- This exclusive Mathews feature eliminates any need for repair work on the job. A spare barrel can be inserted in a few minutes and the broken barrel repaired in the shop.

- With automobile accidents breaking an increasing number of hydrants, this speed of replacement is of tremendous importance in maintaining community fire protection.

No Other Hydrant Offers So Many Essential Features:

Compression type valve prevents flooding • Head turns 360° • Replaceable head • Nozzle sections easily changed • Nozzle sections easily raised or lowered without excavating • Protection case of "Sand-Spun" cast iron for strength, toughness, elasticity • Operating thread only part to be lubricated • All working parts contained in removable barrel • A modern barrel makes an old Mathews good as new • Available with mechanical-joint pipe connections

LEGAL

Delayed performance

It is a well-settled principle of law in the construction of contracts that when the obligation of performance by one party presupposes the doing of some act on the part of the other prior thereto, that the neglect or refusal to perform such act not only dispenses with the obligation of performance by the other, but also entitled him to rescind, or when rescission will not afford him an adequate remedy, to continue the work and recover such damages as the delinquency has occasioned.[1]

In this case the action was brought to recover damages arising from breach of a contract under which a contractor was to erect an elevator. Foundations for the elevator were to be built by another contractor. However, before the foundations had been built, the owner instructed the elevator contractor to proceed with his work. His inability to proceed with the work at that time because the foundations were not ready added to his costs and he brought action to collect damages. His complaint was dismissed by the trial court and this dismissal was affirmed by the Appellate Division on the ground that there was no implied agreement that the foundations would be ready to permit the contractor to proceed immediately with the construction of the elevator. This judgment was reversed by the Court of Appeals.

The Court of Appeals said that while it is true that there is no express provision in the contract requiring advance construction of the foundation, there is a clear implication in the wording that it should be prepared in advance and that the elevator contractor should be advised when it is ready.

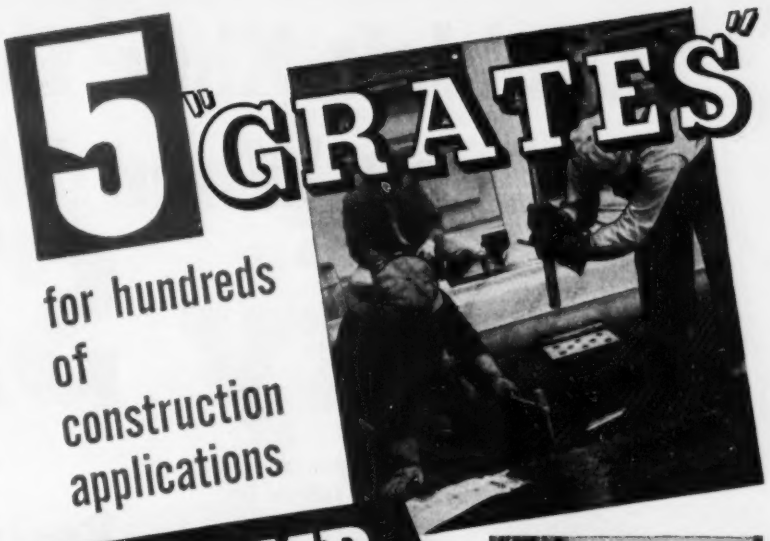
(1) Mansfield v New York Central & H.R.R., 102 N.Y. 205.

Prevention of performance

The law is well settled that "when it can be determined what, according to the contract, the plaintiff would receive for that which he has done, and what profit he would have realized by doing that which, without fault, he has been prevented from doing, then these sums become the legal, as they are the just, measure of damagers."[1]

(1) De Ponte v Mutual Contracting Co., 86 A. 2d 785, Superior Court of New Jersey, Appellate Division, Feb. 13, 1952.

(These summaries of court decisions are prepared by I. Vernon Werbin, New York attorney and civil engineer.)



to

- *Protect against floor wastes*
- *Reinforce all concrete surfaces*
- *Insure fireproof, non-slip footing for men and traffic*
- *Insure efficiency with safety*
- *Insure protection, plus comfort through complete ventilation*

The Klemp Metal Grating Corporation has been serving the needs of contractors, civil engineers and public works officials for almost half a century. During this time, Klemp has produced and patented several specialized gratings, such as Hexteel and Floorsteel.

Klemp's engineers have exclusively specialized in the fabrication of gratings, such as Hexteel Surface Armor and Floorsteel Flexible Floor Armor for reinforcement of all surfaces where concrete or mastic are applied. In addition, they have developed a bridge decking which is the most up-to-date flooring for modern bridges . . . prefabricated to exact specifications.

Klemp's diamond riveted and welded gratings are ideal for foot and plant material traffic wherever rugged strength is needed in structural footwalks, stair treads and open steel flooring.

We solicit the opportunity to let Klemp's engineers help solve your most difficult grating problems. Send in your blueprints for quotations today. All types of Klemp Gratings are available for immediate shipment.

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Plant: **6601 S. Melvin Ave., Chicago 38, Ill.**

"Couldn't Kink Them, Even When We Tried," . . .

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Other Specially Designed Tuffys For Special Uses

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Created to stand up under stresses and strains imposed by wheeled scrapers. Flexible to withstand sharp bends . . . stiff enough to resist looping and kinking when slack.

Tuffy DRAGLINES

Finer construction technique and toughened materials pay off in maximum abrasive resistance. Provides extra flexibility with no loss in quality . . . spools better and rides better on grooves, hugs drum when casting.

Tuffy DOZER ROPE

A special, tougher construction for tough dozer service on 150' reels for mounting on the tractor just back of the wedge socket. By feeding through only enough rope from the reel to replace section damaged on the drum, users report up to 300% savings in rope costs and half the down time.

Braided Construction Lets Tuffy Slings Straighten Out with No Damage

This Pennsylvania construction company owner proved to himself that Tuffy Slings are extra flexible, extra strong. He knows the patented, braided construction actively fights off knots and kinks . . . and after using Tuffy Slings for over a year, he knows they last longer under most rugged use!

Some stranded wire ropes may have the strength needed for sling work, but they are hard to handle and hitch because of their stiffness. Also, they're subject to kinking and material damage when bent around small radii.

When you use Tuffy Slings, you're sure of maximum flexibility *plus* strength, thanks to Tuffy's patented 9 part machine-braided wire fabric construction. The 9 parts are interlaced in an exclusive way that forms a fabric that can be repeatedly bent around abrupt corners. And even when one of the strands is cut or broken, there's no stranding!

* Name Furnished on Request

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Specialists in Wire Rope and Braided Wire Fabric

Says
Owner of Eastern Construction Company*, Speaking of Tuffy Slings.

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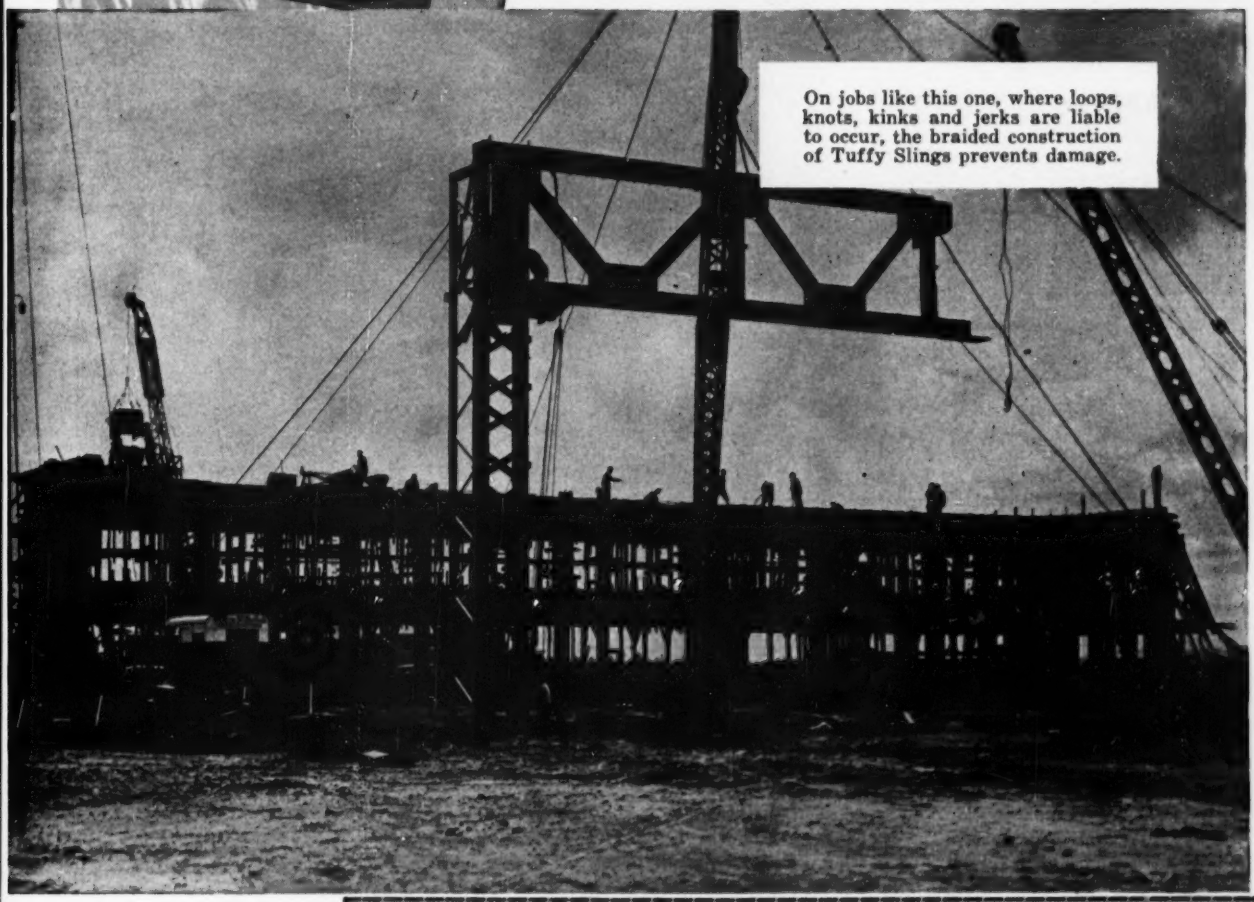
Contains plenty of factual, useful data on 12 braided sling types . . . various types of sling fittings, 30 illustrations of sling uses, information on splicing Tuffy Slings as well as Wire Rope. It's the only handbook of its kind in the braided sling field, and it's yours for the asking! Get your free copy of the new Tuffy Sling Handbook . . . mail the coupon below *today!*



On jobs like this one, where loops, knots, kinks and jerks are liable to occur, the braided construction of Tuffy Slings prevents damage.

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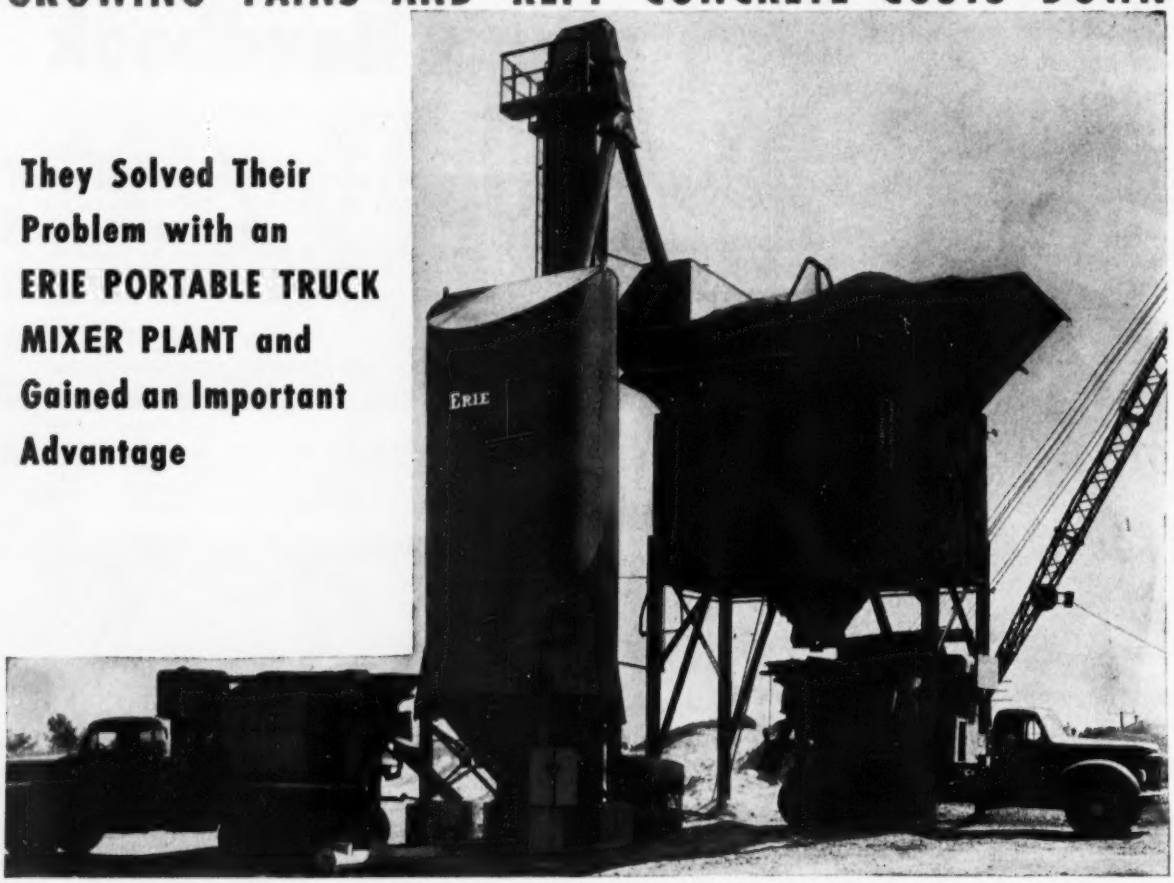
HERE'S HOW MACDOUGALD-WARREN LICKED ATLANTA'S GROWING PAINS AND KEPT CONCRETE COSTS DOWN

They Solved Their Problem with an ERIE PORTABLE TRUCK MIXER PLANT and Gained an Important Advantage



MACDOUGALD-WARREN'S . . . ERIE PORTABLE TRUCK MIXER PLANT GTES-79 WITH 600 BBL. GROUND SILO

Atlanta's development and growth program posed a problem for MacDougald-Warren, one of the South's ready-mix operators. Much of the construction is in the newer parts of town, away from MacDougald-Warren's central location. This meant long hauls . . . fewer trips . . . higher costs.

An Erie Portable Truck Mixer Plant licked this time-cost problem and gave MacDougald-Warren an important advantage to boot.

Said Mr. Edward Kelley, "Our Erie truck mixer is portable and also gives us central plant capacity, In one run it averaged 60 yards for nine hours straight. We'll use our Erie Portable here in Atlanta and on jobs throughout the south."

This installation is only one of hundreds where an Erie unit is helping to beat a time-cost problem. It can do as much for you. We invite you to consider and field test our equipment.

More Facts About Erie's GTES-79 Portable Truck Mixing Plant

One man can operate this unit at full capacity.

It's pre-assembled into large sections which make set-up and take down fast and easy. Stows compactly for over-the-road transit too.

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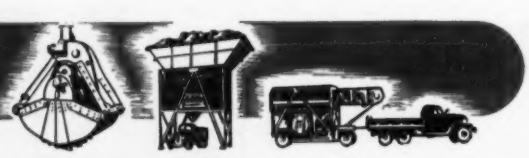

Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.
ELSIE EAVES, Manager *J. A. MAHONEY, Reports* *M. R. ROESSLER, Statistics*

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

† **Mass., Hingham**—TRANSFORMER BANKS—B.A. 1/27—Dist. P. Wks. Office, First Naval Dist., 495 Summer St., Boston, relocating 19 transformer banks, U. S. Naval Ammunition Depot, NOY 73821, Spec. 34858.

BIDS ASKED—BUILDINGS

Conn., New London—HOUSING—B.A. 1/23—City Housing Auth., New London, MR 48 moderate rental housing. Plans deposit $50. Extended date. CD 12/16.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MAINE—State Hy. Comn., State House, Augusta, **J. R. Cianchette**, 120 Main St., Pittsfield, Me. CA **$128,167.** hy., Inv. 113, Clinton-Amherst. Bids Dec. 31.

NEW HAMPSHIRE—Dpt. P. Wks. & Hys., Concord, **Landers & Griffin, Inc.**, 800 Islington St., Portsmouth, N. H. LB **$326,917.** road mix 4.375 mi. and 35 ft. rein.-con. bridge on NH 11 in Farmington and New Durham. Bids Dec. 30. CD 12/24.

Bay State Dredging & Contg. Co., 62 Condor St., East Boston, Mass. LB **$82,130,** est. $45,000. dredging channel Herring River, Harwich; LB **$125,430,** est. $115,000. dredging Saugus River, Saugus and Lynn, MASSACHUSETTS. Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, Mass. Bids Jan. 2.

North Atlantic Dredging Co., 62 Condor St., East Boston, Mass. CA **$230,000,** est. $225,000. hydraulic dredging for beach restoration, Plum Island, Newburyport; CA **$40,020,** est. $54,000. Hither Creek beach restoration, Nantucket (Island);

New England Dredge & Dock Co., 102 Broad St., Boston, Mass. CA **$50,005,** est. $50,000. hydraulic dredging Basin at Green Pont, Falmouth, MASSACHUSETTS. Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, Mass. Bids Dec. 29. CD 12/24.

▲† **Gil Wyner Co., Inc.**, 12 Newland St., Malden, Mass. CA **$1,484,739,** est. $1,000,000. on site utilities roads, grading, Bedford Research Center, Eng. 19-016-53-25, BEDFORD, MASS. U. S. Eng., 857 Commonwealth Ave., Boston, Mass. CD 12/23.

BUILDINGS

LOW BIDS AND CONTRACTS

O. D. Purrington Co., Inc., 171 Westminster St., Providence, R. I. LB. **$428,814,** est. $400,000. completion Memorial High SCHOOL, ADAMS, MASS. Town, School Dpt., J. F. Farrell, supt., Commercial St., Adams, Mass. Bids Dec. 23. CD 12/9.

Jefferson Constr. Co., 75 First St., Cambridge, Mass. LB **$987,495,** HOUSING, Proj. Mass. 24-1, Hill St., BROCKTON, MASS. Brockton Housing Auth., 164 Richmond St., Brockton, Mass. Bids Dec. 29. CD 12/2.

▲ **Platt Constr. Co., Inc.**, 99 First St., Cambridge, Mass. LB. **$1,961,000.** 200 HOUSING units, Proj. Mass 7-4, NEW BEDFORD, MASS. New Bedford Housing Auth., P. F. Tripp, exec. dir., Presidential Heights, New Bedford, Mass. Bids Dec. 29. CD 12/4.

▲ **Jefferson Constr. Co.**, 75 First St., Cambridge, Mass. LB **$2,273,000.** HOUSING, Proj. 31-1, Mystic Ave., SOMERVILLE, MASS. Somerville Housing Auth., 30 Memorial Rd., Somerville, Mass. Bids Dec. 31. CD 12/2.

▲ **Cantor Constr. Co.**, 185 Corey Rd., Brookline, Mass. LB $2,225,000. MAINTENANCE and TRAFFIC DEPOT and LABORATORY BLDG., junctions of Rtes 128 and 9, WELLESLEY, MASS. State, P. Wks. Dpt., 100 Nashua St., Boston, Mass. Bids Dec. 30. CD 12/16 .

▲ **Felix Buzzi & Sons**, 612 S. Main St., Torrington, Conn., LB, **$1,290,000,** Supplementary Bid A plus **$275,000** Proj. BA-K 56 OCCUPATIONAL THERAPY BLDG., State Hospital, NORWICH, CONN. State P. Wks. Comr., Hartford, Conn. CD 3/31.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

† **Md., Baltimore**—PIER SERVICES—B.A. 1/20—Dist. P. Wks. Office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk 11, Va., repairs to pier services at Naval Reserve Training Center, Fort McHenry, NOY 74909, Spec. 35816. Plans deposit $10.

Md., Salisbury—B.A. 1/21—Comrs. Wicomico Co. Water & Sewer Auth., Court House, Contr. WI 5-52W Sect. L, water mains, appurtenances, Fruitland and vicinity. Plans deposit $15. Clarke Gardner & Percy Sterling, Calvert and Bond Sts., consult. engrs.

† **N. J., Wrightstown**—HANGARS, etc.—B.A. 1/22—U. S. Eng., 121 N. Broad St., Phila., 1, Pa., readiness hangars and utilities and site imprvs., McGuire Air Force Base, ENG 36-109-54-267. Extended date. CD 12/8.

† **N. Y., Rome**—FACILITIES—B.A. 2/12—U. S. Eng., 80 Lafayette St., New York. Zone 13, miscellaneous facilities, Griffiss Air Force Base, $500,000 Plans deposit $20. CD 9/14/51.

BIDS ASKED—BUILDINGS

▲ **Pa., Springfield**—HIGH SCHOOL—B.A. 1/19—Springfield Twp. School Dist., Springfield, Senior High School. $1,000,000. Harry G. Stewart, 117 W. 17 St., Phila., archt. Sauter & Castor, 1411 Walnut St., Phila., engrs. CD 10/17/51.

N. Y., Brooklyn—HOUSING IMPRVS.—B.A. 1/20—New York City Housing Auth., 63 Park Row, New York, Zone 7, topsoil and planting; construction of street and yard imprvs. for Cooper Park Houses (Proj. No. NY 5-23) in area generally bounded by Morgan Ave., Frost St., Kingsland Ave., Jackson St., Debevoise Ave., Maspeth Ave. and within the Contract Limit Lines. Plans deposit $25 each.

▲ **N. J., Passaic**—HOUSING—B.A. 1/22—Passaic Housing Auth., City Hall, housing, Project NJ 13-2, incl. 116 units. $1,400,000. Extended date. CD 8/21.

SOON LETS CONTRACT—BUILDINGS

▲ **Pa., Phila.**—BANK, etc.—First National Bank, 315 Chestnut St., soon lets contract new drive in bank and office and alterations to present bank and office bldg. $1,700,000. Trautwein & Howard, 1411 Walnut St., archts.

▲ **Pa., Phila.**—PHYSICS—University of Pennsylvania, 209 S. 36 St., soon lets contract physics bldg. **$1,400,000.** James R. Edmunds, Jr., 1300 Hamilton St., Baltimore, Md., archts. William H. Gravell & Assoc., 2031 Chestnut St., Phila., Pa., engrs. CD 2/9/51.

▲ **Pa., Pottstown**—HOSPITAL—Pottstown Hospital, 724 N. Charlotte St., soon lets contract hospital and nurses home addns., paving. $2,050,252. Vincent G. Kling, 917 Corinthian Ave., Phila., archt. Stevens Bruder, Lewis Tower Bldg., Phila., engr. CD 10/23.

▲ **Pa., Willow Grove**—HOUSING—P. Wks. Office, Fourth Naval Dist., Phila. Naval Base, Phila., soon lets contract construct, manage, finance Military Housing at U. S. Naval Station, $1,116,000. W. Morton Keast, 1201 Chestnut St., Phila., archt. CD 12/6/50.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, **The Grandview Constr Corp.**, 740 S. Fulton Ave., Mt. Vernon, N. Y., LB **$3,875,249,** est. $4,428,000, New York State Thruway Mohawk Sect., Subdivision 1, Mont. Co. Line-Gregg Rd.-Co. Rd. 29R; Crawford Rd.; Gregg Rd.; Camp Pattersonville Rd.; Rotterdam Water Tower Access Rd.; Pattersonville-Scotch S.H. 1482, 4.77 mi. Throughway, 1.5 mi. access. MT 52-18, ST. 52-35, RC 52-123, Schenectady Co. Bids Dec. 30, CD 12/8.

† **Gunite Constr. Corp.**, 420 Lexington Ave., New York 7, N. Y. CA **$49,000,** resurf. face of east lock wall, Black Rock Locks, Buffalo, NEW YORK. U. S. Eng., Engineer Park, Buffalo 7, N. Y.

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany, **Potter-DeWitt Corp.**, Pavilion, N. Y., LB **$1,808,597.** est. $1,989,000, paving 6.52 mi. and traffic interchange construction, New York State Thruway, Cayuga and Onondaga Counties;

Arute Bros., Inc., 560 S. Main St., New Britain, Conn., LB **$613,059,** est. $637,000, 3.29 mi. Rte. 15 interchange facilities, New York State Thruway, Monroe Co.;

Delma Eng. Corp., 1208 Wyatt St., New York 60, N. Y. LB **$5,996,079,** est. $7,505,000, 1.29 mi. work on Major Deegan Expressway, Bronx Co.;

Morris C. Soper Constr. Co., 140 Clinton St., Watertown, N. Y., LB **$355,070,** est. $386,000, 0.75 mi. const. West Main St. Arterial, City of Watertown, Jefferson Co.;

M. K. Engineering Co., Inc., 36 State St., Albany, N. Y. LB **$252,610,** est. $281,000 b. conc. 1.8 mi. Rte. 86, Franklin Co. Bids Dec. 30, CD 12/8.

▲† **C. J. Langenfelder & Son, Inc.**, 8427 Pulaski Hy., Baltimore, Md., CA. **$1,464,742,** airfield facilities, Part II, Sampson Air Force Base, Eng. 30-075-53-161, SAMPSON, N. Y. U. S. Eng., 80 Lafayette St., New York, 13, N. Y. Bids Dec. 11. CD 11/11

NEW JERSEY—State Hy Dpt., State Hy. Office Bldg., 1035 Parkway Ave., Trenton,

Franklin Contg. Co., Alleghany Ave., Newark, N. J., LB. **$888,656,** 3.12 mi. Route 29 Section 7-E from Mercer St. to Middle Brook reconstr. East Bound Parkway Borough of Somerville and Bridgewater Twp., Fed. Proj. UI 178 (10), Somerset Co. Bids Dec. 30. CD 12/11.

PENNSYLVANIA—State Hy. Dpt., 506 N. Office Bldg., Harrisburg.

Brown, Davis & White, R. D. 1, Grantville, Pa., LB **$294,094,** widn. and overlay 11,973 ft. existing road with crushed aggregate base and bit. surf. T. R. 64, Clinton Co.;

Charles Riebe, Lansford, Pa., LB **$286,048,** overlay 22,876 ft. existing road with crushed aggregate base and bit. surf. 22 ft. wide, T. R. 443, Schuylkill Co.;

J. Paul Lauback, Box "C", Benton, Pa., LB **$441,544.** wid'n and overlay 26,470 ft. roadway with crushed aggregate base and bit. surf. 20 ft. wide, T. R. 549, one I-beam and one rein.-con. bridge, Tioga Co. Bids Dec. 30. CD 12/10.

▲ **PENNSYLVANIA**—State Hy. & Bridge Auth., 506 N. Office Bldg., Harrisburg.

Harrison Constr. Co., 1101 Western Ave., Pittsburgh, Pa., LB **$4,166,628.** constr. 14,094 ft. rein.-con. roadway and superstructure for 4 structures and one substructure, Penn-Lincoln Parkway between Colbert and Maurice Sts., Allegheny Co. Bids Dec. 30. CD 12/10.

† **American Dredging Co.**, 12 S. 12 St., Phila., Pa., LB. **$249,840.** dredging in Schuylkill River, No. 36-109-53-15, Philadelphia Co., PENNSYLVANIA. U. S. Eng., 121 N. Broad St., Phila., Pa.

R. M. Luff Constr. Co., Willow Grove, Pa., CA. **$464,614.** sewage treatment plant addns., alterations, BRISTOL, PA. Bristol Boro, Bristol, Pa. Bids Nov. 18. CD 10/14.

Union Paving Co., 1227 N. Broad St., Phila., Pa., LB. **$74,834,** paving, Schedule A-1;

Eastern Asphalt Co., Packard Bldg., Phila., Pa., LB. **$118,973,** paving Schedule A-1;

General Asphalt Paving Co., 6851 Rising Sun Ave., Phila., Pa., LB. **$71,703,** paving, Schedule A-3;

James D. Morrissey, Inc., 9119 Frankford Ave., Phila., Pa., LB. **$60,499.** paving, Schedule B, PHILA., PA. Dpt. Procurement, City Hall Annex, Phila., Pa. Paul MacMurray, c/o owner, Streets Comr, CD 10/30/44.

† **Ralph Cornell**, 16 S. Broad St., Phila., Pa., CA. **$194,400,** power house, Naval Air Material Center, NOY 75507, Spec. 36325, PHILA., PA. Dpt. Navy, Phila. Naval Base, Phila., Pa. CD 1/12/51.

Ernest Ventresca & Son, 5600 Bingham St., Phila, Pa., LB **$128,032.** water mains, Mansfield Ave., etc.;

Amedio De Sabato, 1235 Porter St., Phila., Pa., LB **$72,422,** water mains, 3rd St., PHILA., PA. Dpt. Procurement, City Hall Annex, Phila. Pa. Bids Dec. 16. CD 12/11.

F.O. Day, Inc., Rockville Pike, Rockville, Md. LB **$125,705.** repaving imprv. roadways, sidewalks at various locations, 28,700 sq. yd. road paving, 5,500 sq. ft. concrete sidewalk, 300 lin. ft. curb and gutter, Contr. 1218, HYATTSVILLE, MD. Washington Suburban Sanitary Comn., Hamilton St., Hyattsville, Md. Bids Dec. 29.

Carl L. Furner, Inc., 96 Kendall Blvd., Oaklyn, N. J., LB. **$191,810,** sewage treatment works addn., DOVER, DEL. City, City Hall, Dover, Del. CD 2/13/51.

Intercounty Constr. Corp., Hyattsville, Md., LB **$150,091** collecting sewers, Marshalltown; LB **$172,987,** Red Clay Creek Interceptor, Marshalltown, WILMINGTON, DEL.

(Continued on page 102)

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000.

Classes of Construction

(Name in order of Listing)

Water Supply	Latin America
Sewers, Waste Disposal	Public Buildings
Bridges	Commercial Buildings
Streets & Roads	Industrial Buildings
Earthwork, Waterways	Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects inviolved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
B.A.	Bids Asked
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

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New Le Roi 125 cfm Airmaster at work cutting costs. The two model 52 Le Roi-CLEVELAND breakers get plenty of air, break concrete faster, and reduce the time spent on the job. You save.

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New 85 cfm — Perfect as a "one-gun" compresser. Operates heavy breaker and other tools that are too much for 60 cfm units. Here we see one operating the handy 17½-lb. Le Roi-CLEVELAND H-22 sinker.

New 125 cfm — Both gas and diesel models. Ideal for running two heavy breakers, such as these Le Roi-CLEVELAND Model 52's, from one machine. Priced the same as the old 105-cfm gas and diesel units. A low-priced liquid-cooled 105 is still available to meet your needs.

New 185 cfm — Both gas and diesel models. Offers more capacity than a 160-cfm unit, but priced the same as the old 160. Just another example that proves Le Roi gives you more for your money.

# of portable compressors ever offered gives you more for your air-equipment dollars

More sizes to choose from — in the bigger-than-ever LeRoi Line

9 SIZES — 14 MODELS

60 cfm gas
New! 85 cfm gas
105 cfm gas
105 cfm Tractair
New! 125 cfm gas
New! 125 cfm diesel
New! 185 cfm gas
New! 185 cfm diesel
210 cfm gas
New! 250 cfm diesel
New! 365 cfm gas
New! 365 cfm diesel
600 cfm diesel (IHC)
600 cfm diesel (Murphy)

NOW you can get more air capacity for less money! Now you can match your job requirements *exactly* with the portable compressor that lets you do the most work at the least cost! For now, thanks to Le Roi's expanded Airmaster compressor line, you have the industry's widest range of sizes to choose from!

The new Airmasters in this famous line fill present-day gaps in your air-power needs. As you know, some of the standards established years ago for air-compressor sizes are inadequate today. Bigger breakers, faster rock drills, air-motor controls, etc., eat up the reserve formerly provided by these ratings.

But you don't have to penalize yourself by working with pressures that are too low — or by operating a machine that's too big and too expensive for the job to be done. You can get a Le Roi that's exactly right for size.

Have your Le Roi distributor show you why you're ahead with an Airmaster *any way you look at it* — for adequate capacity, for minimum investment, for economy, for trouble-free operation, for long operating life. *Write for bulletins.*

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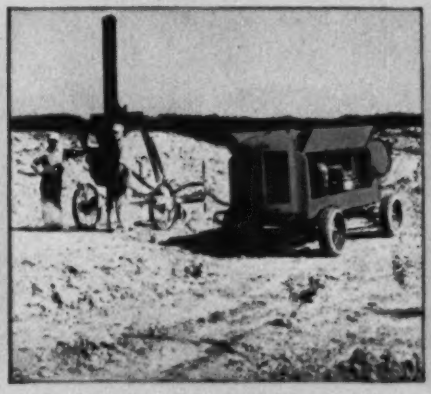
New 250 cfm — Diesel-powered. Operates two lightweight wagon drills, like the Le Roi-CLEVELAND DR-34, or one heavy wagon drill, like the Le Roi-CLEVELAND DR-30. Price is same as former 210 diesel.



New 365 cfm — Gas and diesel units replace 315-cfm models. Extra capacity handles many applications that formerly required a 500. Here it runs a Le Roi-CLEVELAND DR-30 wagon drill for deep holes.

600 cfm — These heavy-duty diesel units have plenty of capacity to help you get extra footage from your wagon drills and hand-held tools. The 600 shown here operates two Le Roi-CLEVELAND DR-30 deep-hole wagon drills with plenty of air to spare for other tools.

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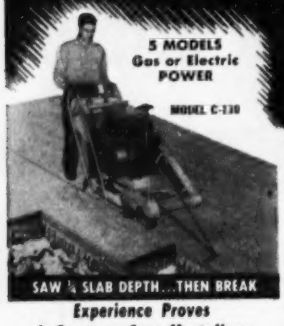

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- **POSITIVE SCREW FEED**...instant control for lowering or raising blade from cut
- **ADJUSTABLE DEPTH LOCK**...permits pre-setting of cutting depth—instantly adjusted
- **STREAMLINED BEARING HOUSING**...permits full depth sawing. Factory greased and sealed

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DIAMOND BLADES

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CONCRETE GRINDING CORP.
300 STRAIGHT ST. PATERSON, N. J.

(Continued from page 99)

New Castle Levy Court, Municipal Bldg., Wilmington, Del. Whitman, Requardt & Assocs., 1304 St. Paul St., Baltimore, Md., engrs.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Eatontown Gardens, Inc.**, Eatontown, N. J., Separate Contracts, $5,233,332. Monmouth APARTMENTS, EATONTOWN, N. J. Kelly & Gruzen, 80 Fifth Ave., New York, N. Y., archts.

Laessle Builders, Inc., 117 S. 17 St., Phila., Pa., CA. $400,000, HOME for the Aged, HADDONFIELD, N. J. Presbyterian Synod of N. J., c/o Albert Manus, 395 Ridge St., Newark, N. J., Bids Oct. 15. CD 10/6.

Deercroft Builders, 1214 Locust St., Phila. Pa., Separate Contracts. $700,000. RESIDENTIAL DEVELOPMENT, Flourtown Rd., BARREN HILL, PA.

Delaware County Housing Auth., 1827 Constitution Ave., Chester, Pa., rejected bids Nov. 6, Calcon Hook Gardens HOUSING, DARBY, PA. LB $431,570. Will re-advertise. CD 11/13, under LB.

A. C. Elfman & Sons, 56 S. Main St., Doylestown, Pa., CA. $90,000. 1 story, 74x164 ft. masonry, brick FACTORY, DOYLSTOWN, PA. Penn Engineering & Mfg. Co., Buckingham, Pa.

Jacob Herkewitz, 52 St. and Montgomery Ave., Phila., Pa., Separate Contracts. $300,000. APARTMENT DEVELOPMENT, Powelton and Wycomble Aves., LANSDOWNE, PA. Karl F. Otto, 1528 Buckingham Dr., Rosemont, Pa., archt.

† **Hughes Foulkrod Co.**, Schaff Bldg., 1505 Race St., Phila., Pa., CA. $348,692. OFFICE, WAREHOUSE, etc. Serial No. Eng 18-020-53-29. LETTERKENNY, PA. U. S. Eng., 24 St. and Maryland Ave., P.O. Box 1715, Baltimore 3, Md. Modjeski & Masters, State St. Bldg., Harrisburg, Pa., engrs.-archts. Bids Dec. 5. CD 11/22.

▲ **Arters Bros., Inc.**, Lima, Pa., Separate Contracts. $3,000,000. RESIDENTIAL DEVELOPMENT, Pennell Rd., LIMA, PA.

▲ **Bently Bros.**, c/o owner, CA $4,000,000. RESIDENTIAL development in Aston and Chester Twps., MEDIA, PA. Bridgewater Corp., 5 E. Woodland Ave., Springfield, Pa. George Hay, Lima, Pa., archt.

W. Harley Miller, Martinsburg, W. Va., LB $830,889. Junior and Senior HIGH SCHOOL, MERCERSBURG, PA. James Buchanan Joint School Auth., Mercersburg, Pa. Buchart Engineering Corp., 611 W. Market St., York, Pa., archts. Bids Dec. 8.

M. L. Haldeman & Son, 103 W. Chocolate Ave., Hershey, Pa., CA. $540,917, general constr. HIGH SCHOOL for the Greenwood Joint School Dist., MILLERSTOWN, PA. State Public School Bldg. Auth., 101 S. 25 St., Harrisburg, Pa. Bids Nov. 13. CD 11/17, under LB.

Frank D'Lauro, 8010 Germantown Ave., Phila., Pa. LB $403,500. general contract elementary SCHOOL, NORRISTOWN, PA. Plymouth Twp. School Dist., Black Horse School, Norristown, Pa. Lambert McGee Assoc., 1629 Chestnut St., Phila., Pa., engrs. CD 8/8.

Carl K. Krakover, 132 Garrett Rd., Upper Darby, Pa., Separate Contracts. $632,000. RESIDENTIAL DEVELOPMENT, Burnside Ave. and Chestnut St., NORRISTOWN, PA.

Joseph Salvucci, 66 and Callowhill Sts., Phila., Pa., Separate Contracts. $900,000. RESIDENTIAL DEVELOPMENT, near Rte. 202, PAOLI, PA. Alex Perna, 721 N. 65 St., Phila., Pa., archt.

Joseph R. Farrell, Inc., 4424 Market St., Phila., Pa., CA. $150,000. 1 story, 90x150 ft. concrete block WAREHOUSE, PHILA., PA. Harbison-Walker Refractories Co., New Broad St. Station Bldg., Phila., Pa. CD 11/26.

James W. Gordon, 956 Bullock Ave., Yeadon, Pa., Separate Contracts. $350,000. RESIDENTIAL DEVELOPMENT, Durard St. and Gorgas Lane, PHILA. PA. Henry S. Berg, 1411 Walnut St., Phila., Pa., archt.

Rubin Lipsky, 30th and Dickinson Sts., Phila., Pa., Separate Coutracts. $88,000. 1 story, 101x173 ft. brick, block food processing PLANT, PHILA., PA. George F. Francis, Delaware and Poplar Sts., Phila., Pa., archt.

▲ **McCloskey & Co.**, 1620 W. Thompson St., Phila., Pa. CA $4,923,000. Wilson Park Low Rent HOUSING, PHILA., PA. Phila. Housing Auth., 42 S. 15 St., Phila., Pa. Bids Nov. 13. CD 11/25 under LB.

Harry M. Shender, 850 Longshore Ave., Phila., Pa., Separate Contracts. $350,000. RESIDENTIAL DEVELOPMENT, McPherson Ave., PHILA., PA. Henry S. Berg 1411 Walnut St., Phila., Pa., archt.

† **Stone Constr. Co.**, 1717 Brandywine St., Phila., Pa. LB. $186,870. Development ENGINEERING BLDG. addn., Frankford Arsenal, Eng 36-109-53-137, PHILA., PA. U. S. Eng., 121 N. Broad St., Phila., Pa. Wallace & Warner, Bryn Mawr, Pa., engrs. and archts. Bids Dec. 17. CD 11/10.

▲ **Sunnybrook, Inc.**, North Hills, Pa., Separate Contracts. $1,500,000, 97 RESIDENCES, Haws Lane In Edrenheim, PHILA., PA. G. Harold Murphy, 1612 Sellers St., Phila., Pa., archt.

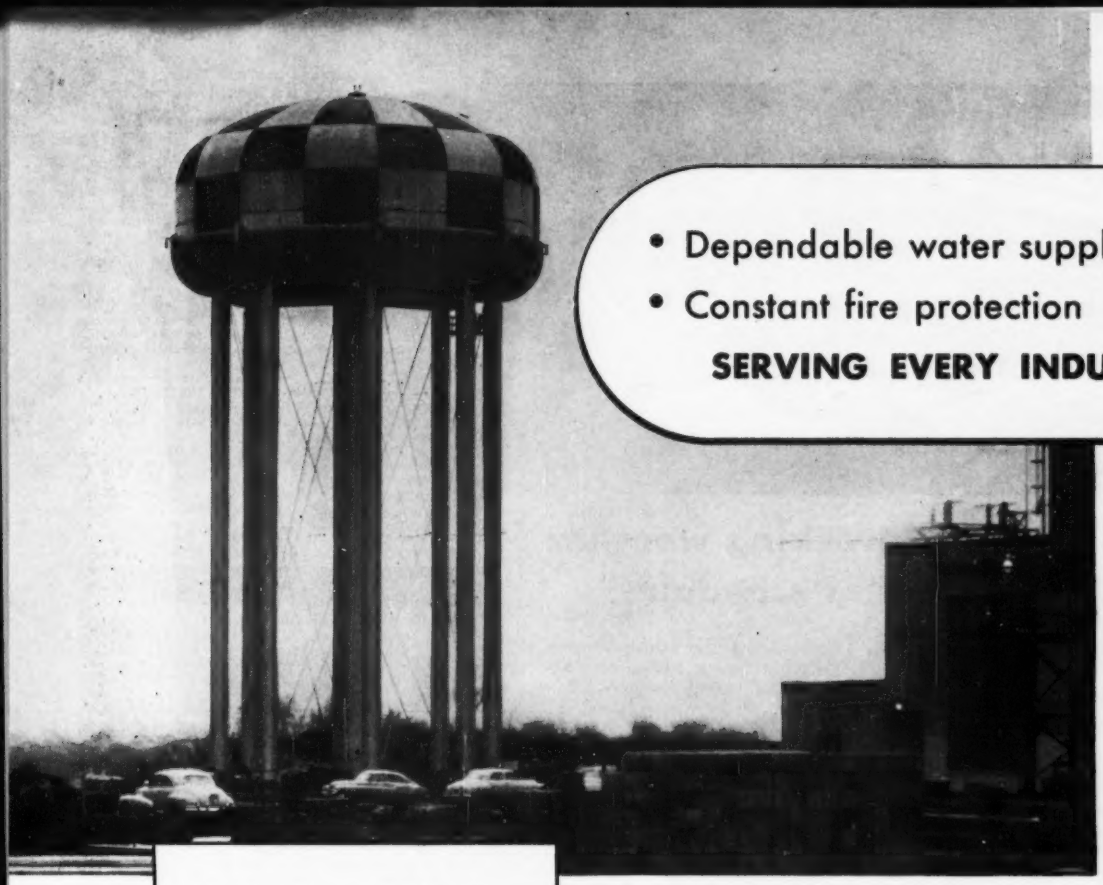
Stefan Co., 675 Burmont Rd., Drexel Hill, Pa., Separate Contracts. $486,500, RESIDENTIAL DEVELOPMENT, 16 and Norwood Aves., PROSPECT PARK, PA.

▲ **Irwin & Leighton**, 1505 Race St., Phila., Pa., LB $1,000,000. STUDENT UNION BLDG., STATE COLLEGE, PA. Penna State College, State College, Pa. Severud-Elstad-Krueger, 415 Lexington Ave., New York, N. Y. engrs. Bids Dec. 2. CD 11/25.

Irwin & Leighton, Schaff Bldg., Phila., Pa., LB $750,000. Nittany Lion INN, STATE COLLEGE, PA. Penna. State College, State College, Pa., Bids Dec. 2. CD 11/14.

William Drayman, 314 Sharpless St., West Chester, Pa., CA. $90,000. WAREHOUSE, OFFICE and parking area, WEST CHESTER, PA. Charles Squer, 219 N. Penn St., West Chester, Pa.

(Continued on page 104)



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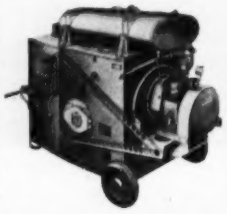

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(Continued from page 102)

▲ **Waverly Contractors, Inc.,** 210 E. Lexington St., Baltimore, Md. CA. **$2,100,000.** three hundred and twenty-one 2 story, 16x36x16 ft., 14x28x16 ft., brick, frame DWELLINGS, GARAGE for 186 cars, incl. slum clearance, 27 to 30 Sts., Greenmount Ave. to Reese St., BALTIMORE, MD. Waverly Housing Corp., 210 E. Lexington St., Baltimore, Md. Alexander S. Cochran, 411 N. Charles St., Baltimore, Md., archt. Albert E. Pohmer, 833 Park Ave., Baltimore, Md., engr.

Morrow Bros., Inc., 2315 N. Charles St., Baltimore, Md. CA. **$883,200.** 3 story, 110x355 ft., brick, concrete, steel, Frederick Road Elementary SCHOOL, BALTIMORE, MD. City, Bureau Bldg. Constr., 410 Municipal Bldg., Baltimore 2, Md. CD 12/23, under LB.

The Davis Constr. Co., 320 W. 24 St., Baltimore, Md. LB. **$90,777.** 1 story, concrete, steel, masonry AUTO SERVICE BLDG., DUNDALK, MD. Dundalk Sales & Service, Inc., North Point and Wire Mill Rd., Dundalk, Md. Howard R. Mason, 6411 Birchwood Ave., Baltimore, Md., archt.

▲ **F. A. Collins Co.,** Dover, Del., Separate Contracts, **$2,500,000,** SHOPPING CENTER, DOVER, DEL.

▲ **Bal-Tone Co.,** Marshallton, Del., Separate Contracts, **$1,500,000** RESIDENTIAL DEVELOPMENT, Limestone Acres, MARSHALLTON, DEL.

Philip Di Egidio, 503 S. Scott St., Wilmington, Del., Separate Contracts, **$300,000,** RESIDENTIAL DEVELOPMENT, Cleveland Ave., WILMINGTON, DEL.

Rupert Constr. Co., 3400 Lancaster Ave., Wilmington, Del., CA. **$90,000,** hardware STORE and WAREHOUSE, WILMINGTON, DEL. Hance Hardware Co., 4 and Shipley Sts., Wilmington, Del. G. Morris Whiteside, 909 Tatnall St., Wilmington, Del., archt.

SOUTH

BIDS ASKED—BUILDINGS

† **Va., Yorktown**—B.A. 1/20—P. Wks. Office, Headquarters Fifth Naval Dist., U. S. Naval Base, Norfolk, Zone 11, addnl. water pumping facilities at U. S. Naval Mine Depot, NOY 72501, Spec. 33673. Plans deposit $10.

† **W. Va., South Charleston**—STORAGE AREA—B.A. 1/20—Dist. P. Wks. Office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk, 11, Va., rough projectile storage area at U. S. Naval Ordnance Plant, Spec. 35833. Plans deposit $10.

† **S. C., Charleston**—SHOP—B.A. 2/5—Dpt. Navy, Officer in Charge of Construction, Box 365, Naval Base, electric and electronics shop, Charleston Naval Shipyard, NOY 75274. Extended date. CD 12/9.

BIDS ASKED—BUILDINGS

▲ **Tenn., Manchester**—HOUSING—B.A. 1/23—Manchester Housing Auth., Manchester, housing, Projects Tenn. 28-1 and Tenn. 28-2. $1,000,000.

Ga., Moultrie—SCHOOL—B.A. 1/29—City, City Hall, Senior High School. $750,000. Associated School Architects, 707 Grand Bldg., Macon, Ga., archts.

Ala., Mobile—SCHOOL—B.A. 2/17—Alabama State Bd. Educ., 503 Dexter Ave., Montgomery, trade school. $750,000. Plans deposit $50. Platt Roberts & Co., Merchants National Bank Bldg., archts. CD 9/19, under LB.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **P. Wks. Office,** Potomac River Naval Command, Naval Gun Factory, Wash., D. C., cancelled bids to have been opened Jan. 14, plate fuse testing facilities roadways, elevated tanks, railroad and electric lines, NOY 73388, DAHLGREN, VA., **$400,000** CD 12/24.

† **Ferguson Corp.,** Hampton, Va., LB, **$417,666** rehabilitation and expansion of sewerage and water systems, Naval Aviation Ordnance Test Station Naval Air Facility, NOY 73599, Spec. 34673, CHINCOTEAGUE, VA. P. Wks. Office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk 11, Va. Bids Dec. 30. CD 12/10.

▲ **WEST VIRGINIA and OHIO**—City of Parkersburg, City Hall, Parkersburg, W. Va.

Wm. J. Howard, Inc., 35 E. Wacker Dr., Chicago., Ill., CA, **$4,535,400,** bridge across the Ohio River, between Parkersburg, W. Va. and Belpre, O.

▲† **T. C. Bateson Co.,** Irwin-Keaster Bldg., Dallas, Tex., LB, **$2,561,140,** maintenance hangers at Pinecastle Air Force Base, Inv. 53-37, ORLANDO, FLA. U. S. Eng., P. O. Box 4970, Jacksonville, Fla. Bids Dec. 30. CD 11/19.

† **Thos. A. White Constr. Co.,** 1600 Midway Ave., Mobile, Ala., LB, **$108,431,** ground control approach facilities, Brookley Air Force Base, Inv. 53-29, MOBILE, ALA. U. S. Eng., P.O. Box 1160, Mobile 7, Ala. Bids Dec. 3. CD 11/5.

▲† **United Enterprises Corp.,** 2845 N. Roman St., New Orleans, La. CA **$1,815,725** est. $1,875,000, hangar maintenance bldg., Lake Charles Air Force Base, Eng. 41-243-53-49, LAKE CHARLES, LA. U. S. Eng., 606 Santa Fe Bldg., Galveston, Tex. CD 12/29, under LB.

▲ **Boh Bros. Constr. Co.,** 2400 Cypress St., New Orleans, La. CA **$1,483,517.** Palmetto Street Overpass, NEW ORLEANS, LA. City, Purchasing Div., City Hall, New Orleans, La. Bids Dec. 19, awarded Dec. 29. CD 12/30, under LB.

City, City Hall, Knoxville, Tenn. cancelled bids to have been opened Jan. 7, baseball stadium, KNOXVILLE, TENN. $500,000. CD 12/19.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Alexandria Redevelopment & Housing Auth.,** 131 Belvoir St., Alexandria, Va., rejected bids Nov. 6, 148 public HOUSING units, VA-4-4, ALEXANDRIA,

(Continued on page 107)

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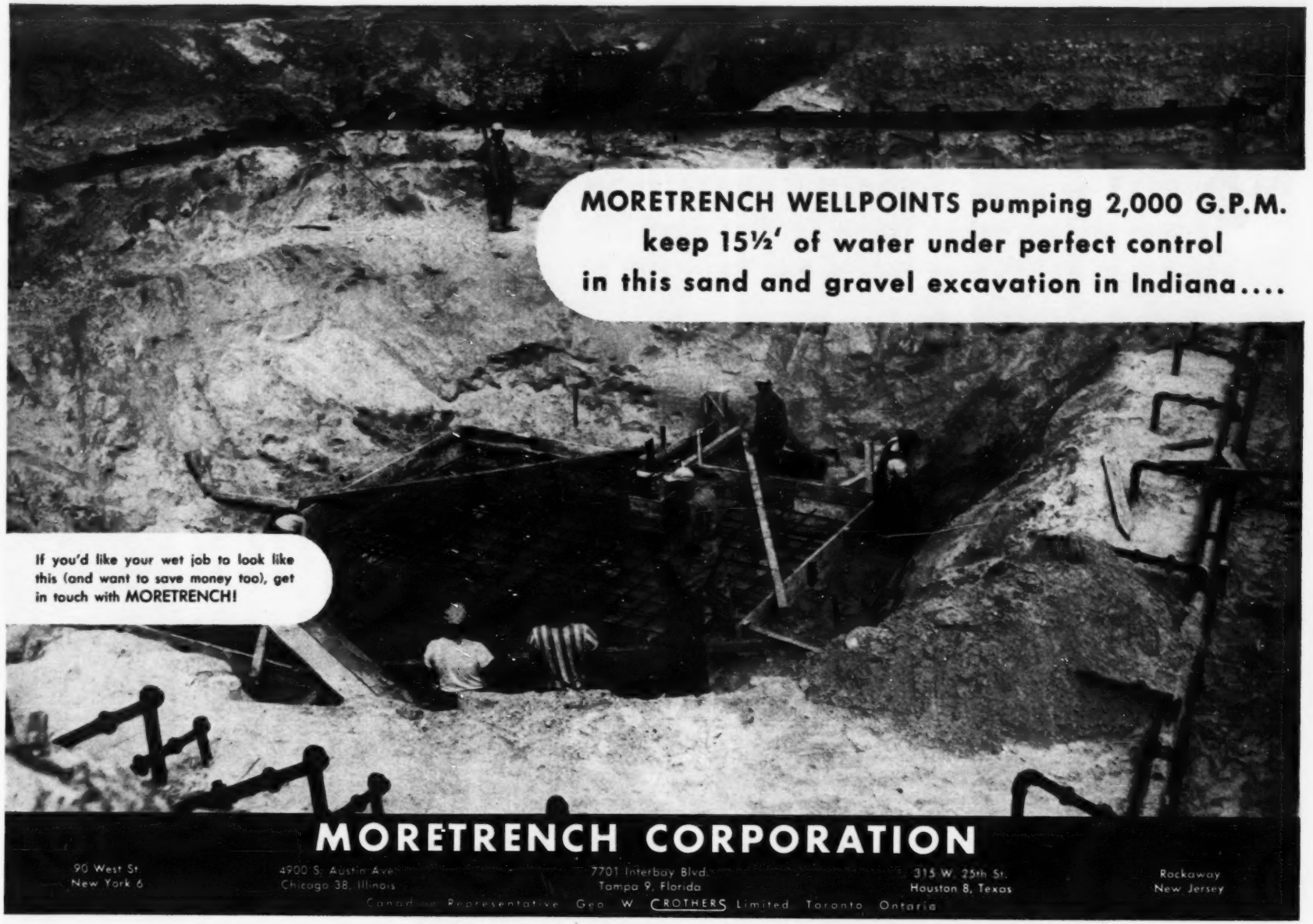
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Canadian Representative Geo. W. CROTHERS Limited Toronto Ontario

(Continued from page 104

VA. LB, $1,157,840, base bid, $1,143,840, Alt. 1. CD 11/10, under LB.

Little Constr. Co., 1205 E. Worthington Ave., Charlotte, N. C. CA. $393,044, alterations, addns. to Sprulll Bldg. at State HOSPITAL (Dix Hill), RALEIGH, N. C. State Hospitals Bd. Control, R. M. Purser, bus. mgr., Raleigh, N. C. H. Raymond Weeks, Inc., Durham, N. C., archt. Wiley & Wilson, 711 W. Main St., Richmond, Va., engrs. Bids Dec. 19.

▲ **City**, City Hall, Greenville, S. C. rejected bids Dec. 16, Memorial AUDITORIUM, GREENVILLE, S. C. LB $1,260,000. CD 12/23 under LB.

Daniel Constr. Co., 429 Main St., Greenville, S. C., CA $232,200. MILL, GREENVILLE, S. C. Belrug Mills, Inc., River St., Greenville, S. C. Bids Dec. 16. CD 10/1.

E. A. Scott & Sons, Americus, Ga., CA, $426,948 HOUSING, Projects GA 62-4 5-6-7-8 and 9, AMERICUS, GA. Americus Housing Auth., Americus, Ga. Bids Dec. 31. CD 12/2.

Rosegood Development Co., 596 Ponce De Leon Ave., N. E. Atlanta, Ga., Owner Builds, $350,000, 50 RESIDENCES, ATLANTA, GA.

† **Southern Constr. Co.**, Daniel Field, Augusta, Ga., LB, $935,617, MPTC CLASSROOM BLDGS., Inv. 53-8, CAMP GORDON, GA. U. S. Eng., 200 E. Julian St., Savannah, Ga. Bids Dec. 23. CD 12/12.

J. Hilbert Sapp, Orlando, Fla., CA, $656,600, HOUSING, Projects FLA 26-1 and FLA 26-2, BARTOW, FLA. Bartow Housing Auth., Bartow, Fla. Bids Dec. 29. T. V. Talley, Box 1104, Lakeland, Fla., archts. CD 12/11.

Leo Mendel & H. M. Strauss, Central Airport Courts, Birmingham, Ala. Owner Builds, $750,000, 100 RESIDENCES, BIRMINGHAM, ALA.

Andalusia Development Co., Andalusia, Ala., CA, $452,000, 58 HOUSING units, GEORGIANNA, ALA. Georgianna Housing Auth., Georgianna, Ala. Bids Dec. 30. CD 12/3.

† **Forcum-James Co.**, P.O. Box 237, Memphis, Tenn., LB, $656,476, two 165-man barracks, etc. at Redstone Arsenal, Inv. 53-22, HUNTSVILLE, ALA. U. S. Eng., P.O. Box 1169, Mobile, 7, Ala. Bids Oct. 18. CD 10/8.

Henderson, Black & Greene, Troy, Ala., CA, $379,887 HOUSING, Projects ALA 70-1 and ALA 70-2, UNION SPRINGS, ALA. Union Springs Housing Auth., Union Springs, Ala. Bids Dec. 29. CD 12/2.

Central Constr. Co., Philadelphia, Miss. CA $558,900. HOUSING, Proj. Miss. 72-2, CORINTH, MISS. Corinth Housing Auth., Corinth, Miss. Bids Dec. 30. CD 12/9.

Joseph O. Young, 2237 Deslande St., New Orleans, La. Owner Builds. $400,000. 50 RESIDENCES, NEW ORLEANS, LA.

Clarence Prosper, 4027 Holly Grove St., New Orleans, La. Owner Builds. $400,000. 40 RESIDENCES, NEW ORLEANS, LA.

▲ **V. L. Nicholson Co.**, 611 S. Central St., Knoxville, Tenn., CA. Approx. $1,000,000. mfg. PLANT, LENOIR CITY, TENN. Yale & Towne Mfg. Co., 405 Lexington Ave., New York 17, N. Y. Bids Dec. 19. CD 12/15.

Sam P. Maury Constr. Co., 554 Adams St., Memphis, Tenn. CA. Approx. $750,000. auto parking GARAGE, MEMPHIS, TENN. Goldsmith's, Front St., Memphis, Tenn. Bids Dec. 18. CD 12/19.

▲ **Harmon Constr. Co.**, P.O. Box 1414, Oklahoma City, Okla., CA. $5,871,987, HOSPITAL addn., MEMPHIS, TENN. Baptist Memorial Hospital, 899 Madison Ave., Memphis, Tenn. Bids Dec. 16. CD 12/23, under LB.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

Mich., Ann Arbor—B.A. 1/22—University of Michigan, Bd. Regents, W. K. Pierpont, vice pres., Campus Sewer 48, 6,173 ft. 12-to 48-in. concrete sewers, 3,459 ft. 8-to 18-in. vitr. tile sewer; Grading 49, 152,000 cu. yd. earth out and same earth fill grading, clearing. Drury, McNamee & Porter, 306 State Savings Bank Bldg., Ann Arbor, engrs. CD 11/3, under Public Buildings.

† **O., Warren**—B.A. 1/30—U. S. Eng., 237 Fourth Ave., Huntington 18, W. Va., elevated steel water tank at Lordstown Ordnance Depot, Eng. 46-022-53-23. CD 12/24.

BIDS ASKED—BUILDINGS

Wis., Green Bay—HOSPITAL—B.A. 2/3—Bellin Memorial Hospital, 742 S. Webster Ave., 4 story, semi-base 26,000 sq. ft. hospital addn. Schmidt, Garden & Erikson, 104 S. Michigan Ave., Chicago, Ill., archts. CD 2/19.

Wis., Madison—RESEARCH CENTER, etc.—B.A. 2/4—University of Wisconsin, Madison, Dairy Cattle Instruction and Research Center. $400,000. Plans deposit $25. Law, Law, Potter & Nystron, 121 S. Pinckney St., arcts. CD 7/23.

▲ **Mich., Lansing**—CIVIC CENTER UNITS—B.A. 2/6—City, R. W. Crego, mayor, City Hall, civic center units, 7 story auditorium unit, $3,500,000; 5 story civic office, $1,000,000, Pine and Allegan Sts., Orlie J. Munson, 409 Wilson Bldg., Lansing, archt. CD 6/18/52.

▲ **Mich., Lansing**—AUDITORIUM and OFFICE—B.A. 3/16—City, City Hall, veterans' memorial auditorium, veterans' and civic center office bldgs. $6,000,000. Plans deposit $3. O. J. Munson, 409 Busch Bldg., archt. Lansing Engineering Dpt., City Hall Annex, engr. CD 6/18.

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Mich., Grand Rapids—CHURCH and SCHOOL—Holy Spirit R. C. Parish, c/o Roger Allen & Assoc., archts., 1126 Grand Rapids National Bank Bldg., soon lets contract 1 and 2 story, bsmnt., brick, stone church and school, $300,000.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **OHIO**—Ohio Turnpike Comn., 361 E. Broad St., Columbus.

Harrison Constr. Co., 1101 Western Ave., Pittsburgh, Pa., LB. $3,519,250. 5.2 mi. four-lane Ohio Turnpike, linking with Pennsylvania Turnpike, Mahoning Co. Bids Jan. 3. CD 12/18.

▲ **Ohio Fuel Gas Co.**, 99 N. Front St., Columbus, O. Owner Builds. $21,000,000. pipe lines, storage areas, equip. in firm's 57-county distribution area, OHIO. CD 9/19.

† **George Sheaf & Co.**, 440 Neilston St., Columbus 3, O., CA $972,245, constr. academic bldg., crash and fire station (7 stall), fire station-structural, guard house and 4 squadron operations bldg., Lockbourne Air Force Base, Serial No. ENG 46-022-53-22, COLUMBUS, O. U. E. Eng., 237 Fourth Ave., Huntington 18, W. Va. Bids Dec. 9. CD 12/15, under LB.

Yost Constr. Co., Decatur, Ind., LB, $79,900 Northwest Section Sewers, DECATUR, IND. City, City Hall, Decatur, Ind. CD 8/20/46.

Bloomer Truck & Shovel Co., Bloomer, Wis., CA. $106,053, sewage treatment plant and sewers, BLANCHARDVILLE, WIS. Village, Village Hall, Blanchardville, Wis. Bids Dec. 18. CD 11/18.

† **Champion, Inc.**, P.O. Box 231, Iron Mountain, Mich. CA. $288,533. readiness hangar and utilities, Kinross Air Force Auxiliary Field, KINROSS, MICH. U. S. Eng., 1900 Cadillac Tower, Detroit 26, Mich. Bids Dec. 22. CD 12/3.

Tri-City Excavating Co., 11724 Wormer St., Redford, Mich. LB $408,147. 22,102 lin. ft. 15-to 48-in. sanitary sewer lines, ST. CLAIR SHORES, MICH. City, D. J. Harn, city clk., St. Clair Shores, Mich. Bids Dec. 18. CD 12/11.

BUILDINGS

LOW BIDS AND CONTRACTS

David E. Gardner, 105 N. Grand Ave., Columbus, O., CA, $305,000, LIBRARY addn., COLUMBUS, O. Columbus Public Library, 96 S. Grant St., Columbus, O.

▲ **George Sheaf & Co.**, 449 Neilston St., Columbus, O., CA. $1,109,407. 180x400 ft. main floor, 80x400 ft. mezzanine, steel, brick, concrete BUILDING 3-B addn., COLUMBUS, O. North American Aviation, Inc., 4300 E. Fifth Ave., Columbus, O. Awarded Jan. 2.

Sever-Williams Co., Washington Court House, O., LB. $589,000, general constr. 20-room addn. and re-

PROTECTION

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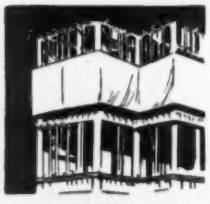
solve your toughest cover problems



These fire-resistant Webb covers are made of finest quality canvas. Double lock-stitched hems and heavy reinforcements at all points of abrasion or strain. Grommets grip like a bulldog. Made in any size, to meet any specifications, Webb Flamefoil-treated tarps will give you faithful service! For winter operations, Webb Windbreakers with plastic windows are ideal. Write for information and prices.

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PUSEYJONES

modelling Fairview HIGH SCHOOL, DAYTON, O. Bd. Educ., 232 N. Main St., Dayton, O. Bids Dec. 23. CD 12/2.

Henry Stock & Sons, 30 N. Ludlow St., Dayton, O., CA **$200,000,** 2 story, bsmnt., 70x136 ft. automobile SALES-SERVICE Bldg., Oakwood and Springhouse Rd., DAYTON, O. Ray Simons, Inc., 530 N. Main St., Dayton, O.

▲ **Maurice Fishman,** Southgate Center, Maple Heights, O., Owner Builds. **$2,500,000.** 30-unit SHOPPING CENTER, York and Pearl Rds., PARMA HEIGHTS (near PARMA), O.

George W. Lathrop & Sons, Inc., 1510 Montcalm St., Toledo, O., CA. **$509,691,** general constr. Waite HIGH SCHOOL addn., incl. 2 story gym and classrooms, TOLEDO, O. Bd. Educ., Southard Ave., Toledo, O. Bids Dec. 18, awarded Dec. 22. CD 12/24, under LB.

Sherman-Mann & Co., 188 W. Randolph St., Chicago, 1, Ill. Owner Builds. **$500,000,** 47 HOMES area of Grey and Washington Sts., EVANSTON, ILL. F. L. La Passo, 8 S. Dearborn St., Chicago 3, Ill., archt.

▲ **Clearing Industrial District, Inc.,** 38 S. Dearborn St., Chicago, 3, Ill., CA, **$2,000,000,** 1 story, 271,000 sq. ft. FACTORY, track work and paving, FRANKLIN PARK, ILL. Motorola, Inc., 4545 W. Augusta Blvd., Chicago, Ill. Awarded Dec. 10. CD 12/17.

J. L. Simmons, Inc., 2146 N. Woodford St., Decatur, Ill., LB, **$994,000,** 54 APARTMENT bldgs. Incl. 120 units, KANKAKEE, ILL. Kankakee Co. Housing Auth., Kankakee, Ill. Lankton & Ziegele, 1100 Main St., Peoria, Ill., archts.

Capelle Bros. & Diedrich, Inc., 190 Gillett St., Fond du Lac, Wis., CA. 1 story, 106x160 ft., steel, brick PLANT, FOND DU LAC, WIS. Quickfreeze Refrig. Co., Fond du Lac, Wis.

C. G. Schmidt, Inc., 4199 N. Richards St., Milwaukee, 12, Wis., LB. **$329,203,** general contract Riverview SCHOOL addn. and remodeling, GLENDALE, WIS. Joint School Dist. No. 1, 4650 N. Pt. Washington Rd., Milwaukee 9, Wis. Bids Dec. 22. CD 12/17.

▲ **J. H. Findorff & Sons, Inc.,** 601 W. Wilson St., Madison, Wis., LB, **$1,494,398,** general contract, INTENSIVE TREATMENT BLDG. at State Hospital;

Carl E. Mohs & Assocs., 2550 University Ave., Madison, Wis., LB, **$715,000,** FOOD SERVICE BLDG. at State Hospital, MENDOTA, WIS. State Dpt. P. Welfare, 128 S. State Capitol, Madison, Wis. Bids Dec. 30. CD 11/25.

Worden-Allen Co., 4100 N. 3 St., Milwaukee, 12, Wis., CA. **$145,000,** 1 story, 98x242 ft., steel, enclosure of craneway for mfg. purposes, MILWAUKEE, WIS. Cleaver-Brooks, 326 E. Keefer Ave., Milwaukee, 12, Wis. E. A. Abendorth, c/o contractor, engr.

P. G. Miron Constr. Co., 139 N. Story St., Appleton, Wis., CA. 1 story, 202x242 ft. (irregular) GRAPHIC ARTS BLDG., NEENAH, WIS. Marathon Corp., River St., Neenah, Wis. Bids Dec. 2. (**Correction**—location of project). CD 11/25, under Wis., Menasha.

Gosnick Constr. Co., Benton Harbor, Mich. CA. **$92,000.** 1 story, brick, masonry machine SHOP, BENTON HARBOR, MICH. Auto Specialties Mfg. Co., Benton Harbor, Mich.

▲ **O. W. Burke Co.,** 1032 Fisher Bldg., Detroit, Mich. CA. **$8,899,000,** est. $9,000,000. Edward J. Jeffries Homes, incl. eight 14 story apartments, Area 2, Haynes, Gibson, Selden and John Lodge Expressway, Proj. Mich. 1-7, DETROIT, MICH. Detroit Housing Comn., Harry H. Durbin, secy., 409 Griswold St., Detroit, Mich. CD 12/29, under LB.

Campbell Constr. Co., 9301 Michigan Ave., Detroit, Mich. CA **$92,000.** 2 story, brick, block WAREHOUSE-OFFICES, Sherwood St., DETROIT, MICH. Production Steel Co., 2001 Sherwood St., Detroit, Mich.

O. W. Burke Co., 1032 Fisher Bldg., Detroit, Mich. CA. Est. **$500,000.** 1 story, brick, steel FACTORY, McGraw St., DETROIT, MICH. Kelsey-Hales Wheel Co., 3600 McGraw St., Detroit, Mich.

Detroit Engineering & Machine Co., 411 S. Fort St., Detroit, Mich. Owner Builds. **$82,000.** 1 story, brick, masonry FACTORY addn., S. Fort St., DETROIT, MICH.

Alfred A. Smith, 721 E. Saratoga St., Ferndale, Mich. CA. **$450,000.** 2 story, rein.-con. WAREHOUSE, Victor and Oakland Sts., HIGHLAND PARK, MICH. McKesson-Robbins, Inc., 515 W. Jefferson St., Detroit, Mich. CD 11/13.

A. W. Scharffe & Son, 1605 Remington St., Saginaw, Mich. CA. Est. **$82,000.** 1 story, 74x150 ft., brick, concrete FOUNDRY addn., S. Hamilton St., SAGINAW, MICH. Saginaw Pattern Mfg. Co., 720 S. Hamilton St., Saginaw, Mich.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

Minn., New Ulm—B.A. 1/20—Brown Co., C. E. Schmid, aud., Bridge No. 7090 four 24x101 ft. plate girder spans, skewed 45 degrees over Big Cottonwood River 3.3 mi. south of Essig, SP 08-523-02 (SAR 14) Minn. Proj. S 836 (2), $125,000. Plans deposit $3.25.

Tex., Commerce — NATATORIUM — B.A. 1/29 — State Teachers College of Texas, Commerce, natatorium and rein.-con. swimming pool. $75,000. George L. Dahl, 2101 N. St. St. Paul St., Dallas, archt.

† **Arkansas**—B.A. 2/5—U. S. Eng., P. O. Box 97, Memphis, 1, Tenn., approx. 27,500,000 cu. yd. channel excav. and embankment along St. Francis River, St. Francis and Lee Counties. Plans deposit $25; adv. ENR 1/15. CD 3/9/45.

† **Montana**—POWER TRANSFORMER—B.A. 2/10—Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver, Colo., furnishing, del. f.o.b. cars

(Continued on page 112)

Does the wire rope you use earn this kind of TRUST?

Typical of many, one master mechanic says, "We *always* use Hercules Red-Strand wire rope, because we know we can trust it for long life and safe service . . . every time." An inspector reports, "On a work test, we really abused Leschen rope. It *more* than satisfied our requirements."

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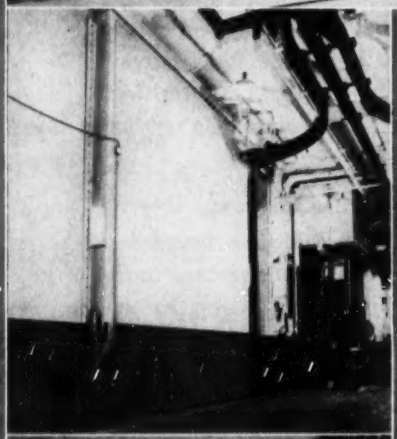


Peelle-Esavian Door - BRISTOL AEROPLANE ASSEMBLY PLANT—Filton, England

The front of this huge, three-bay hangar presents a continuous opening of 1045' in width and 65' 9" in height. To close this opening it was necessary to build one of the largest doors in the world, consisting of 3 pairs of sliding-folding aluminum-covered sections. Motive power is housed in the power mullions at each leading edge of the door structure.

The Peelle-Esavian Door is based on an entirely new principle which eliminates the necessity for expensive structural features in the building. The entire weight of the door is carried on the bottom track and the motivating power is on the door. This door offers many unique advantages, particularly for large openings of unusual height.

Write for new Peelle-Esavian Brochure.

Jet Engine Test Cell Door - PRATT & WHITNEY AIRCRAFT, East Hartford, Conn.
Albert Kahn Associated Architects & Engineers - Builders: Turner Construction Company

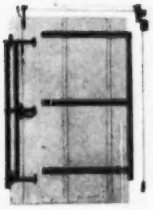
To contain and deaden the roar of jet engines on test, Pratt & Whitney Aircraft had The Peelle Company design and build ten of these huge concrete and steel doors for its new jet engine test cell block. Big enough to admit the most powerful engines of today and the even bigger ones to come, these doors had to be built as thick as the walls of the cells themselves to control the enormous volume of sound produced by the engine while running. Constructed in place, these dense concrete doors weigh 45 tons each, yet their electric motor drive travels them horizontally at the rate of 10 feet per minute quite easily. And, from outside the closed door, only a moderate hum can be heard of the earth-shaking roar of the jet engine running inside.

Motorized Door Measuring 24' x 35' - SEWAREN GENERATING STATION
Owners and Engineers: Public Service Electric and Gas Company of New Jersey
Consulting Architects: Walker & Poor - Builders: United Engineers & Constructors, Inc.

This towering stainless steel and glass door was engineered and built by The Peelle Company to carry out the architectural treatment of the building and to satisfy the engineering requirements. Three vertical sliding panels in the door are counter-weighted and are operated by a triple parallel gear head reducing unit with brake. Door panels move at varying speeds to arrive simultaneously at open position.

This is one of many types of motorized doors and partitions designed and built by The Peelle Company for factories, power stations, warehouses, terminals, hangars, mills, garages, hospitals and schools. Peelle Engineered Doors merit consideration in your plans.

Engineered Doors



Richmond Metal Clad Fire Doors - Swing and Slide

Richmond Flush Kalamein Doors

Richmond "MD" Tubular Steel Industrial Doors

Richmond Steel Door Frames

FIRE DOORS Frames and Hardware

Peelle Dumbwaiter Doors

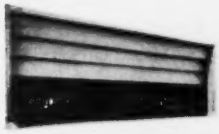
Peelle Counter-Balanced Freight Elevator Doors

Peelle Motorized Solid Panel Car Gates

ELEVATOR DOORS

Peelle Horizontal Sliding Doors

Peelle Vertical Sliding Doors



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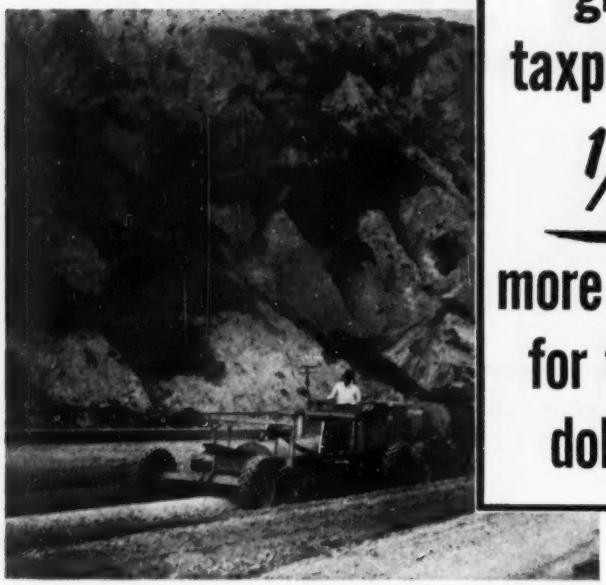

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(Continued from page 109)

outdoor power transformer, with tank-mounted lightning arresters and with wound and bushing-type current transformers for Little Porcupine Switchyard, Missouri-Souris Div., Missouri Diversion Unit, Missouri River Basin Proj., Spec. DS 3866. CD 9/8/44.

Tex., Tyler—Bids Asked—General Electric Corp., 11 Japhet St., Houston, water system, $40,000.

Tex., Tyler—Bids Asked—General Electric Corp., 11 Japhet St., Houston, sewers, $65,000.

Tex., Tyler—Bids Asked—General Electric Corp., 11 Japhet St., Houston, roads, streets and area paving, $75,000.

Tex., Tyler—LIGHTING SYSTEM—Bids Asked—General Electric Corp., 11 Japhet St., Houston, area electric lighting system, $75,000; gas distr. sys., $60,000. CD 12/19.

BIDS ASKED—BUILDINGS

Neb., Kearney—DORMITORY—B.A. 1/24—State Normal Bd., Lincoln, women's dormitory at Kearney State Teachers College. $448,000. John Latenser & Sons, 1307 Farnam St., Omaha, archts. CD 7/9/52.

Ia., Des Moines—SCHOOL—B.A. 2/10—Bd. Educ., 506 Shops Bldg., Callanan Junior High School, $362,859. Wetherell & Harrison, 506 Shops Bldg., archts. CD 11/29/51.

▲ **Mo., Columbia**—JESSE HALL—B.A. 3/13—Bd. of Curators, University of Missouri, Leslie Cowan, secy., Jesse Hall, Jesse Hall addn., incl. 2,000-seat auditorium. $1,250,000. Jamieson, Spearl, Hammond & Grolock, 1696 Arcade Bldg., 812 Olive St., St. Louis, Zone 1, archts. CD 6/2/52.

▲ **N. M., Carlsbad**—PLANT—Bids Asked—International Minerals & Chemical Corp., Potash Div., c/o A. Norman, 20 N. Wacker Dr. Chicago, Ill. and Carlsbad, N. M. plant for production of sulphate of potash. Approx. $4,750,000.

Tex., Dallas—PLANT—Bids Asked—Powers Mfg. Co., Cedar Springs Rd., plant expansion. $860,000. CD 12/23.

▲ **Tex., Longview**—PLANT, etc.—Bids Asked—Grove Controls, Inc., M. H. Grove, Longview, plant, $2,000,000; warehousing, $250,000; water system, $60,000; dirt and earthwork, partly foundation work for plant, $70,000; electric lighting system, $75,000, near here. CD 12/2.

▲ **Tex., Orange**—PLANT—Bids Asked—Foster-Grant Co., Leomister, Mass., mono-styrene plant. $3,750,000. CD 6/18.

SOON LETS CONTRACT—BUILDINGS

▲ **Ark., Jones Mill**—PLANT—General Motors Corp., General Motors Bldg., Detroit, Mich. soon lets contract main section of fabricating plant, $3,000,000. J. Gordon Turnbull, 2630 Chester St., Cleveland, O., engr. CD 12/30.

Tex., Galveston—HOTEL—Jack Tar Court Hotel, North Beach, Galveston, soon lets contract 60-room hotel expansion, $850,000 R. L. Reid, 2506 Richton St., and Rivoire & Peal, 2506 Richton St., Houston, engrs. Thos. M. Price, 819 Broadway, archt. CD 12/17.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

MINNESOTA—State Hy. Dpt., 1246 University Ave., St. Paul,

Berghuis Constr. Co., Clara City, Minn. CA **$212,780.** grading 9.4 mi. between Hutchinson and 0.25 mi. south of North McLeod Co. line, McLeod Co. Bids Dec. 5. CD 11/19.

B. L. Anderson, Guaranty Bank Bldg., Cedar Rapids, Ia., CA, **$152,975**, crushed stone resurf., various roads involving 214 mi. surf. and 105,500 tons crushed stone delivered on road, CEDAR RAPIDS, IA. Bd. Supervs. Linn Co., Court House, Cedar Rapids, Ia. W. H. Behrens, Court House, Cedar Rapids, Ia., co. engr. Bids Dec. 23.

Schildberg Constr. Co., Greenfield, Ia., CA **$112,324** surfacing, GREENFIELD, IA. Adair Co., Greenfield, Ia. Bids Dec. 9.

† **Long Constr. Co.**, Rialto Bldg., Kansas City, Mo. LB **$108,801**, est. $112,568. heating fuel storage and tank farm area, jet fuel tank farm area, Grandview Air Force Base, Eng. 23-028-53, GRANDVIEW, MO. U. S. Eng.,

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for Foundations, Dams, Bridges and all Heavy Structures
GROUT HOLES

Tinney Drilling Co.
Grafton, W. Va.

601 Davidson Bldg., Kansas City 8, Mo. Bids Dec. 29. CD 10/16/52.

† **Clark Bros. Cabinet & Constr. Co.**, 4143 Tracy St., Kansas City, Mo. LB **$73,949.** family housing at Grandview Air Force Base, Inv. 23-028-53-49, GRANDVIEW, MO. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Dec. 19. CD 11/19.

J. S. Alberici Constr. Co., 1550 Irving Ave., St. Louis 20, Mo. LB **$611,813,** est. $780,000. alterations, repairs to primary sedimentation and coagulation basins at Chain of Rocks plant of St. Louis Water Division, ST. LOUIS, MO. City, Frank J. McDevitt, pres., Bd. P. Service, 304 City Hall, St. Louis 3, Mo. Bids Dec. 30. CD 12/4.

▲ **NEBRASKA**—State Dpt. Roads & Irrigation, Lincoln, and City, City Hall, Omaha.

Peter Kiewit Sons Co., Omaha Natl. Bank Bldg., Omaha, Neb., CA. **$1,238,326.** pave center sect. of northwest radial highway, within city of Omaha, Douglas Co. FA-U-112. Bids Dec. 16. CD 12/22, under LB.

George Cook Constr. Co., 1740 Vine St., Lincoln, Neb. CA **$138,751.** General contract terminal bldg. at municipal airport, LINCOLN, NEB. City, City Hall, Lincoln, Neb. Bids Dec. 27. CD 8/25/52.

† **Clarkson Constr. Co.**, 4133 Gardner St., Kansas City, Mo. LB **$379,262.** Restoration of flood protection structures and facilities Armourdale Unit Part II Sec. II, along left bank of Kansas River, Inv. 23-028-53-103, near Kansas City, KANSAS. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Dec. 23. CD 12/9.

† **John A. Petty**, Longview, Tex. LB **$159,076,** est. $177,051, roads, grading, utilities, Eng. 34-066-53-68, CAMP GRUBER, OKLA. U. S. Eng., Box 61, Tulsa 2, Okla., Bids Dec. 23. CD 12/9.

▲† **List & Clark Co.**, Railway Exchange Bldg., Kansas City, Mo., CA **$1,459,699,** floodway on N. Canadian River from 23 St. to Spencer, Eng 34-066-53-33, OKLAHOMA. U. S. Eng., Box 61, Tulsa 2, Okla. Bids Dec. 18, awarded Dec. 29. CD 12/23, under LB.

Metropolitan Paving Co., 300 S. Indiana St., Oklahoma City, Okla., CA. **$168,871,** paving 4 mi. Penn St., west of Edmond, asph. paving 2 mi. County Rd. 5, Edmond;

W. E. Steelman, 2800 N. E. 4th St., Oklahoma City, 4, Okla., CA. **$213,217,** est. $225,000. widn. Western Ave. from 53 to 93 Sts., Britton, OKLAHOMA CITY, OKLA. Oklahoma Co., Court House. Oklahoma City, Okla. Art Marvel, c/o owner, engr. Bids Dec. 29.

Kohler Stover & Ivey, Andrews Bldg., Dallas, Tex., LB **$831,672,** est. $900,000. Turkey Mountain Sewage Disposal Plant, TULSA, OKLA. City, City Hall, Tulsa, Okla., Bids Dec. 30. CD 12/17.

City, City Hall, Galveston, Tex., Purchase and Hire. **$92,500,** addnl. c.i. water mains, GALVESTON, TEX. Joe J. Rady, Box 172, Baytown, Tex., engr. CD 4/30.

Ole Hanson, 4906 Griggs Rd., Houston, Tex., CA **$44,220,** c.i. water lines, HOUSTON, TEX. Houston Industrial Dist., Inc., c/o Ernest B. Klein, 1740 Danville St., Houston, Tex. J. B. Dannenbaum, 3940 Main St., Houston, Tex., engr.

Ole Hanson, 4906 Griggs Rd., Houston, Tex. CA **$64,000,** sanitary sewers, HOUSTON, TEX. Houston Industrial Dist., c/o Ernest B. Klein, 1740 Danville St., Houston, Tex. CD 12/2.

Ole Hanson, 4906 Griggs Rd., Houston, Tex., CA. **$61,115,** 2nd unit road constr. and paving, HOUSTON, TEX. Houston Industrial Dist., Inc., c/o Ernest B. Klein, 1740 Danville St., Houston, Tex. CD 12/16.

Westbrook Addition, 4710 Spruce St., Houston, Tex. Own Forces, under supervision Robert M. Atkinson & Son, engr., 1st Natl. Bank Bldg., Houston, Tex. **$59,100,** site earthwork, 225-acre tract, near HOUSTON, TEX.

Westbrook Addition, 4710 Spruce St., Houston, Tex. Own Forces, under supervision Robert M. Atkinson & Son, engr., 1st Natl. Bank Bldg., Houston, Tex. **$60,050,** electric lighting sys; **$65,000,** natural gas distr. sys., 225-acre tract, HOUSTON, TEX. CD 11/26.

Westbrook Addition, 4710 Spruce St., Houston, Tex. Own Forces, under supervision Robert M. Atkinson & Son, engr., 1st Natl. Bank Bldg., Houston, Tex. **$65,000,** storm sewers, 225-acre tract, HOUSTON, TEX. CD 11/26.

Lubbock Co., Lubbock, Tex., Own Forces. **$85,000,** some road grading, drainage; **$90,000,** 12 mi. farm to market road constr. LUBBOCK, TEX. CD 7/22.

A. L. Hays & Sons, Port Arthur, Tex., LB **$64,540,** sewage disposal unit and lines, for constr. at Vidor, Bridge City, Cove, ORANGE, TEX. Orange Housing Auth., Orange, Tex. Bids Dec. 19. CD 12/1.

A. L. Hays & Sons, Port Arthur, Tex., LB **$63,000,** street constr. and asph. paving at Vidor, Bridge City Cove, ORANGE, TEX. Orange Housing Auth., Orange, Tex. Bids Dec. 19. CD 12/1.

City, Pasadena, Tex., Own Forces. **$65,000,** some street constr., mostly grading, drainage, PASADENA, TEX. George Smith, city engr. CD 1/9/50.

† **Joe Bland Constr. Co.**, 4704 E. 1st St., Austin, Tex. LB **$87,139,** est. $175,000. resurf. runways, over 90,000 sq. yd. 1½ in. hot mix b. conc., Inv. No. Eng 243-53-84, Foster Air Force Base, VICTORIA, TEX. U. S. Eng, Box 1229, Galveston, Tex. Bids Dec. 19.

† **Lowdermilk Bros.**, Box 501, Los Alamos, N. M., LB **$394,025,** est. $275,000. parking aprons. incl. runway and hangar aprons, Walker Air Force Base, Inv. No. Eng. 29-005-53-47, ROSWELL, N. M. U. S. Eng., Box 1538, Albuquerque, N. M. Bids Dec. 23. CD 12/3.

BUILDINGS

LOW BIDS AND CONTRACTS

The Worthington Co., 2428 University Ave., St. Paul, Minn. CA **$85,000.** 640 KW supercharged diesel electric generating unit in municipal POWER PLANT, ADRIAN, MINN. Village, R. M. Hansen, clk., Adrian, Minn. Bids Dec. 3. CD 11/19.

Wagner Constr. Co., Austin, Minn. CA **$510,401.** 1 story, bsmnt., 170x280 ft., vocational high school, AUSTIN, MINN. Bd. Educ., S. L. Coumbs, clk., Austin, Minn. Bids Dec. 19. CD 12/3.

R. McDonald Contg. Co., 6023 Tacony St., Duluth, Minn. LB **$95,698.** municipal storage WAREHOUSE, DULUTH, MINN. City, C. D. Jeronimus, clk., Duluth, Minn. Bids Dec. 18. CD 11/28/46.

W. C. Smith, Inc., 304 Bradley Bldg., Duluth, Minn. LB **$524,875.** WAREHOUSE, DULUTH, MINN. Coolerator Co., 138 West First St., Duluth, Minn. Bids Dec. 19. CD 12/17.

▲ **Sauers Constr. Co.**, 1255 West Larpenteur Ave., St. Paul, Minn. CA **$1,000,000.** general contract SHOPPING CENTER, incl. various retail stores, etc., West 7 St. opposite Sibley Manor Apartments, ST. PAUL, MINN. Sibley Plaza, Inc., M. Clough, pres., c/o contractor.

Wildes Constr. Co., Waterloo, Ia., LB, **$349,642** general contract, HOSPITAL, SIGOURNEY, IA. Keokuk Co., Sigourney, Ia. Bids Dec. 16. CD 11/12.

▲ **Miller-Olson Constr. Co.**, 2222 W. Mullan Ave., Waterloo, Ia., CA. **$1,083,055,** general contract West Senior High SCHOOL, WATERLOO, IA. Independent School Dist., Waterloo, Ia. Bids Dec. 17. CD 1/9, under LB.

▲ **Pausett & Co.**, 215 Louisiana St., Little Rock, Ark., Owner Builds, **$1,500,000,** 200 HOUSING units, JACKSONVILLE, ARK.

Pure Oil Co., Midland, Tex., Owner Builds. **$145,000,** compressor PLANTS unit, near Andrews; **$125,000,** at Dollarhide, near ANDREWS, TEX. CD 12/4.

Arlington Development Co., Rob. B. Holland, Jr., Gulf States Bldg., Dallas, Tex. Owner Builds, **$325,000,** Unit No. 1, 30 DWELLINGS, ARLINGTON, TEX. CD 12/23.

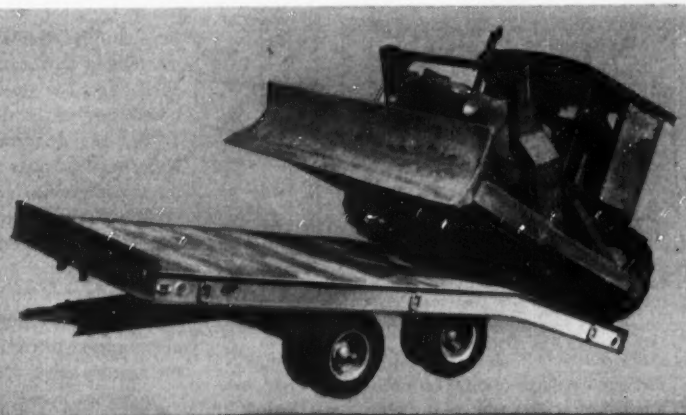
Curtis H. Hirike, Whitesettlement, Fort Worth, Tex. Force Account. **$375,000.** No. 2, 50 DWELLINGS, FORT WORTH, TEX. CD 12/3.

Frank C. Bliss, 407 W. 7th St., Fort Worth, Tex. Owner Builds. **$310,000.** 60 DWELLINGS, FORT WORTH, TEX. CD 12/3.

Cain & Cain, Majestic Bldg., Fort Worth, Tex., CA. **$346,500** addnl. SHOPPING CENTER, FORT WORTH, TEX. Edgewood Terrace Center, Flatiron Bldg., Fort Worth, Tex. CD 6/23/52.

(Continued on page 115)

meeting the need for extra width with the



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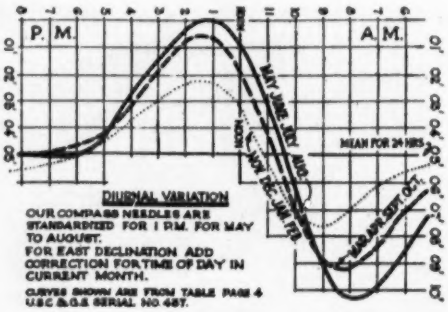
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A. M.
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FOR EAST DECLINATION ADD CORRECTION FOR TIME OF DAY IN CURRENT MONTH.
CURVES SHOWN ARE FROM TABLE PAGE 4 U.S.C. & G.S. SERIAL NO. 487.

get a consistent average. (If your transit will not read within one or two minutes of arc, order a new center pin, as the point may be dull.)

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"Set the declination on the 'A' vernier and bring the compass needle to zero position. The transit is now oriented with true north.

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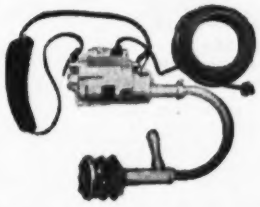

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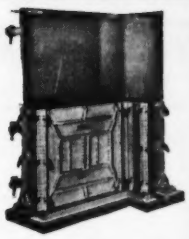

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(Continued from page 113)

Ray A. Conway, 277 Adax St., San Antonio, Tex., Owner Builds. **$390,000.** Unit 2, 60 frame DWELLINGS, concrete slab fdn.; **$300,000** Unit 3, 42 dwellings, HOUSTON, TEX. CD 10/6.

Freeway Development Co., Inc., c/o Lula O. Couch, 5519 Lawndale St., Houston, Tex., Owner Builds. **$340,000.** Unit 3, 45 frame type DWELLINGS, HOUSTON, TEX. CD 10/3.

Morris Kruger, 705 St. Joseph St., Houston, Tex., CA **$735,000.** PLANT, HOUSTON, TEX. Kay Manufacturing Corp., 705 St. Joseph St., Houston, Tex. CD 12/31.

L. O. Stocker Co., Harrisburg Blvd., Houston, Tex., CA **$85,185.** mfg. PLANT addn., HOUSTON, TEX. Broderick & Bascom Rope Co., Market St. Rd., Houston, Tex.

Meadowbrook Building Co., c/o A. V. Arnold, 4377 Winkler St., Houston, Tex. Owner Builds. **$425,000,** 60 DWELLINGS, HOUSTON, TEX. CD 12/17.

Homer Y. Jones Development Corp., Sterling Bldg., Houston, Tex., Own Forces. **$300,000.** Job No. 1, 25 DWELLINGS, HOUSTON, TEX. CD 12/12/51.

Cooper & Matthews Lumber Co., 903 Blodgett St., Houston, Tex. Owner Builds. **$325,000,** 40 DWELLINGS, extens. of Sect. 2, Andover Place, HOUSTON, TEX. CD 12/1.

John E. Cooper, 903 Blodgett St., Houston, Tex. Own Forces. **$375,000,** 35 DWELLINGS, HOUSTON, TEX. CD 11/25.

Pure Oil Co., Midland, Tex., Owner Builds. **$110,000.** COMPRESSOR PLANT unit, MIDLAND, TEX. CD 12/4.

St. Marks Methodist Church, Midland, Tex. rejected bids Dec. 31, CHURCH expansion program, EDUCATIONAL HALL AND SANCTUARY UNITS, MIDLAND, TEX. Est. **$450,000.** Project indefinitely postponed. CD 12/24.

A. L. Hays & Sons, Port Arthur, Tex., CA. **$937,426,** 118 non-farm HOUSING units distributed amongst Bridge City, Cove, Vidor, ORANGE, TEX. Orange Housing Auth., Orange, Tex. Bids Dec. 19. CD 12/3.

Geo. D. O'Sullivan, 116 Volney St., South Houston, Tex., Owner Builds, **$390,000,** 50 DWELLINGS, SOUTH HOUSTON, TEX. F. Perry Johnston, 4528 March Lane, Houston, Tex., archt. CD 12/19.

† **J. M. Brown Constr. Co.,** 317 Highland Ave., Shreveport, La., CA **$172,384,** Lot 1; **$680,051,** Lot 2, clearing, grubbing, grading 8 one story bldgs. SHOP, streets, water, sewers, lighting, etc. for Red River Arsenal, Inv. No. Eng 34-066-53-40, TEXARKANA, TEX. U. S. Eng., Box 61, Tulsa 2, Okla. Bids Dec. 4. CD 12/12, under LB.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

† **WASHINGTON**—B.A. 1/22—Bureau P. Rds., Dpt. Commerce, Morgan Bldg., Portland, Ore.

Chelan Co.—clearing, grubbing, grading, rein.-con. bridge on 2.5 mi. Stevens Pass Hy. Proj. S-A6, G, Unit 2, Plans deposit $2. W. H. Lynch, div. engr.

BIDS ASKED—BUILDINGS

† **Calif., San Diego**—AMMUNITION, etc.—B.A. 1/27—Eleventh Naval Dist., 1220 Pacific Hy., ammunition and storage facilities, NOY 74073, Spec. 35108. Plans deposit $15.

SOON LETS CONTRACT—BUILDINGS

Calif., Watsonville—Y.M.C.A.—Watsonville Branch, Young Mens Christian Assn., 535 Main St., soon lets contract Y.M.C.A. bldg., swimming pool, locker rooms, etc. Albert W. Kahl, 18 W. Second Ave., San Mateo, archt. CD 1/14/44.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

ARIZONA—State Hy. Dpt., 17 Ave. and Jackson St., Phoenix,

Martin Constr. Co., Box 934, Tucson, Ariz., LB. **$456,435,** new alignment, grading, draining select material, agg. base, bit. plant mix 6.2 mi. Tucson-Nogales Hy., Pima Co. CD 6/12.

† **C. T. Madsen,** 808 N. 12 St., Tacoma, Wash., LB, **$97,882,** est. $158,550 fire-alarm system in permanent troop facilities bldg., Inv. 53-71, FORT LEWIS, WASH. U. S. Eng., 4735 E. Marginal Way, Seattle, 4, Wash. Bids Dec. 29. CD 12/3.

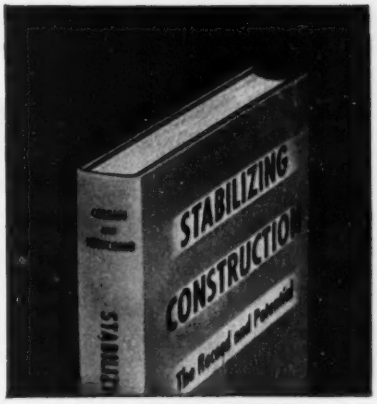
† **Purvis Constr. Co.,** S702 Washington St., Spokane, Wash., CA, **$67,171,** est. $63,614 family HOUSING, Geiger Field, Inv. 53-32, SPOKANE, WASH. U. S. Eng., 4735 E. Marginal Way, Seattle, 4, Wash. Bids Oct. 28. CD 11/21, under LB.

▲† **Valley Constr. Co.,** 7708 Rainier Ave., Seattle, Wash. LB, **$1,644,640,** altering, extending streets, sewers, water works, steam power, telephone and communication sys. in area, Ault Field to be occupied by 8-bldg. development, Specs. 35604, WHIDBEY ISLAND, WASH. P. Wks. Officer, Thirteenth Naval Dist., 1611 W. Wheeler St., Seattle, Wash. Bids Dec. 30. CD 12/9.

▲† **Carl N. Swenson Co., Inc.,** 1095 Stockton Ave., San Jose, Calif., CA, **$1,643,500,** central and test chamber bldgs. for 8 ft. supersonic wind tunnel, Inv. A-9080, MOFFETT FIELD, CALIF. National Advisory Comm. for Aeronautics, Moffett Field, Calif. Bids Dec. 8, awarded Dec. 20. CD 12/15, under LB.

Barrett & Hilp, 918 Harrison St., San Francisco, Calif., LB. **$362,547,** CUSTOM WAREHOUSE, on Pier 92, SAN FRANCISCO, CALIF. Harbor Comn., Ferry Bldg., San Francisco, Calif. Bids Dec. 23.

† **Carter Constr. Co.,** 4340 X St., Sacramento, Calif., LB. **$104,868,** flyaway kit storage bldg., maintenance



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bldg., etc., Spec. 1707, TRAVIS AIR FORCE BASE, CALIF. U. S. Eng., Wright Bldg., Sacramento, Calif. Bids Dec. 23. CD 12/8.

▲† **Nomellini Constr. Co.**, P.O. Box 1177, Stockton, Calif., LB. **$1,796,761**, general purpose warehouse, Spec. 1671, TRAVIS AIR FORCE BASE, CALIF. U. S. Eng., Wright Bldg., Sacramento, Calif.

▲† **Grove, Shepherd, Wilson & Kruge**, 2 Pine St., San Francisco, Calif., CA, **$4,800,000** electric-electronics Shop, Mare Island Naval Shipyard, NOY 75169, Spec. 35366, VALLEJO, CALIF. Twelfth Naval Dist., San Bruno, Calif. Bids Dec. 10, awarded Dec. 22. CD 12/18, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Holmes & Son**, 1420 E. Bethany Home Rd., Phoenix, Ariz., CA. **$413,653**, 200-bed, masonry, structural steel state HOSPITAL addn.;

Daum-Donaldson Constr. Co., 321 S. 24 St., Phoenix, Ariz., CA. **$1,214,092**, masonry, structural steel 500-bed State Hospital Tuberculosis Bldg., PHOENIX, ARIZ. State of Arizona, 19 Ave. and Washington St., Phoenix, Ariz. Bids Dec. 16, awarded Dec. 18. CD 11/13.

Lamb Constr. Co., Aberdeen, Wash., LB, $405,191 twenty-five 1 and 2 story frame HOUSING UNITS at Aberdeen;

Andy Johnson Co., Hoquiam, Wash., LB, **$498,534** 25 one and two story frame HOUSING UNITS at Hoquiam, ABERDEEN, WASH. Housing Auth. of Grays Harbor Co., 539 Finch Bldg., Aberdeen, Wash. Bids Dec. 29. CD 12/5.

Quoidbach Constr. Co., 1422 Commerce St., Longview, Wash., CA, **$393,164**, 50-unit duplex HOUSING, KELSO, WASH. Housing Auth. of City of Kelso, Terminal Bldg., Kelso, Wash. Bids Dec. 30. CD 12/5.

† **Frank Dunham Co.**, Kennewick, Wash., LB, **$452,000** 65 one story, 17x42 ft., frame, prefab demountable housing units for army personnel at Camp Hanford, NORTH RICHLAND, WASH. U. S. Public Housing Auth., c/o V. N. Jones & Assocs., archts., Republic Bldg., Seattle, 1, Wash. Bids Dec. 30. CD 12/8.

Westside Constr. Co., Olympia, Wash., CA, **$205,664**, est. $150,000, 180x380 ft. rein.-con. wood products PLANT, WINLOCK, WASH. Perma Products Co., Winlock, Wash. CD 12/19.

Nomellini Constr. Co., Box 1177, Stockton, Calif., LB, **$336,313**, Type E armory for Calif. National Guard BAKERSFIELD, CALIF. State Div. Architecture, State Bldg., Los Angeles, Calif.

Ausland & Dodson, 400 S.W. Sixth St., Grants Pass, Ore., LB, **$316,000**, Blue Lake Elementary SCHOOL, BLUE LAKE, CALIF. Blue Lake Un. Elementary School Dist., Blue Lake, Calif. Frank T. Georgeson, 537 G St., Eureka, Calif., archt.

▲† **Dinwiddie Constr. Co.**, 210 Crocker Bldg., San Francisco, Calif., CA. **$1,740,000**, 2 rein.-con. engineering SCHOOL bldgs., Naval Postgraduate School, NOY 75205, Spec. 36097, MONTEREY, CALIF. Twelfth Naval Dist., Room B-114, San Bruno, Calif. Bids Dec. 19, awarded Dec. 29. CD 1/5, under LB.

▲ **Biltwell Constr. Co.**, 4745 Geary St., San Francisco, Calif., CA. **$1,577,777** low rent HOUSING, Proj. Cal. 1-10, SAN FRANCISCO, CALIF. San Francisco Housing Auth., 440 Turk St., San Francisco, Calif. Bids Dec. 16, awarded Dec. 27. CD 12/30, under LB.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

Ont., Toronto—B.A. 1/23—Don Mills Development Co., c/o John Layng, 170 Bloor St. W., sewage treatment plant in Don Mills area for large housing development. Plans deposit $100. King, Coons, Phelan & Porter, 8 Bedford Rd., engrs. CD 11/24.

BIDS ASKED—BUILDINGS

N. S., Dartmouth—TORPEDO—B.A. 1/20—Defence Constr. Co. Ltd., 1032 Gottingen St., Halifax, Torpedo Building No. 10 A, at R. C. N. Armament Depot, $300,000. Plans deposit $100. C. J. Connolly, c/o owner, engr.

Ont., Cobourg—ADMINISTRATION — B.A. 1/20—Defence Constr. Ltd., 40 Eglinton Ave. E., Toronto, administration bldg. at military depot, Job. 2321. Plans deposit $100. R. P. Opie, c/o owner, regional engr.

Que., Montreal—POST OFFICE—B.A. 1/21—Dpt. P. Wks., Hunter Bldg., Ottawa, Ont., rein.-con., brick, stone post office, Cremazie Blvd. $550,000. Plans deposit $200. A. E. Gardner, c/o owner, archt.

▲ **B. C., Victoria**—SCHOOL—B.A. 2/4—School District Number 61, T. L. Christie, secy.-treas., Victoria, Central Junior High School, $1,200,000. Plans deposit $10. Wade & Stockdill, 1020 Government St., archts. CD 2/28/47.

SOON LETS CONTRACT—BUILDINGS

▲ **Ont., Toronto**—WAREHOUSE—Simpson's Ltd., 176 Yonge St., soon lets contract superstructure warehouse for department store, at Lawrence Ave. W., and Beechmount Ave., 2 story central section, two 1 story, wings, 1 story office section, $2,000,000. Margison & Babcock, 119 Isabella St., engrs. John B. Parkin Assocs., 717 Church St., archts. F. S. Corley, c/o owner, ch. archt.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Municipality, City Hall, Edmonton, Alta., Own Forces. $72,141, gravelling, grading several streets, EDMONTON, ALTA. CD 10/26/51.

Poole Constr. Co. Ltd., 10503 109 St., Edmonton, Alta., CA. $588,387, two headquarters bldgs., R.C.A.F. Sta-

(Continued on page 119)

Du Pont "GELEX" Blasts Deep Cuts

On rugged section of U. S. 70

FORMIDABLE TERRAIN faced W. E. Graham & Sons as they blasted new route for U. S. 70 over mountain ridge in western North Carolina.

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THE WORK involved excavation of some 3 million cu. yds. of unclassified material. Cuts along the 6-mile stretch, embracing two 22′ lanes, were 190′ deep. The highest fill totaled 220′ and required moving approximately 325,000 cu. yds. of material in 500 linear feet of roadway. Typical culvert took a huge fill 172′ deep and 576′ broad at its base. The fill contained 870,000 cu. yds. of material. Grades ranged from 1.905% to 6.00% in a climb from 1440′ to an elevation of 2655′.

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The Du Pont representative in your area will gladly give you complete information about Du Pont Explosives, blasting supplies and accessories. Check with him soon. E. I. du Pont de Nemours & Co. (Inc.), Explosives Department, Wilmington 98, Delaware.

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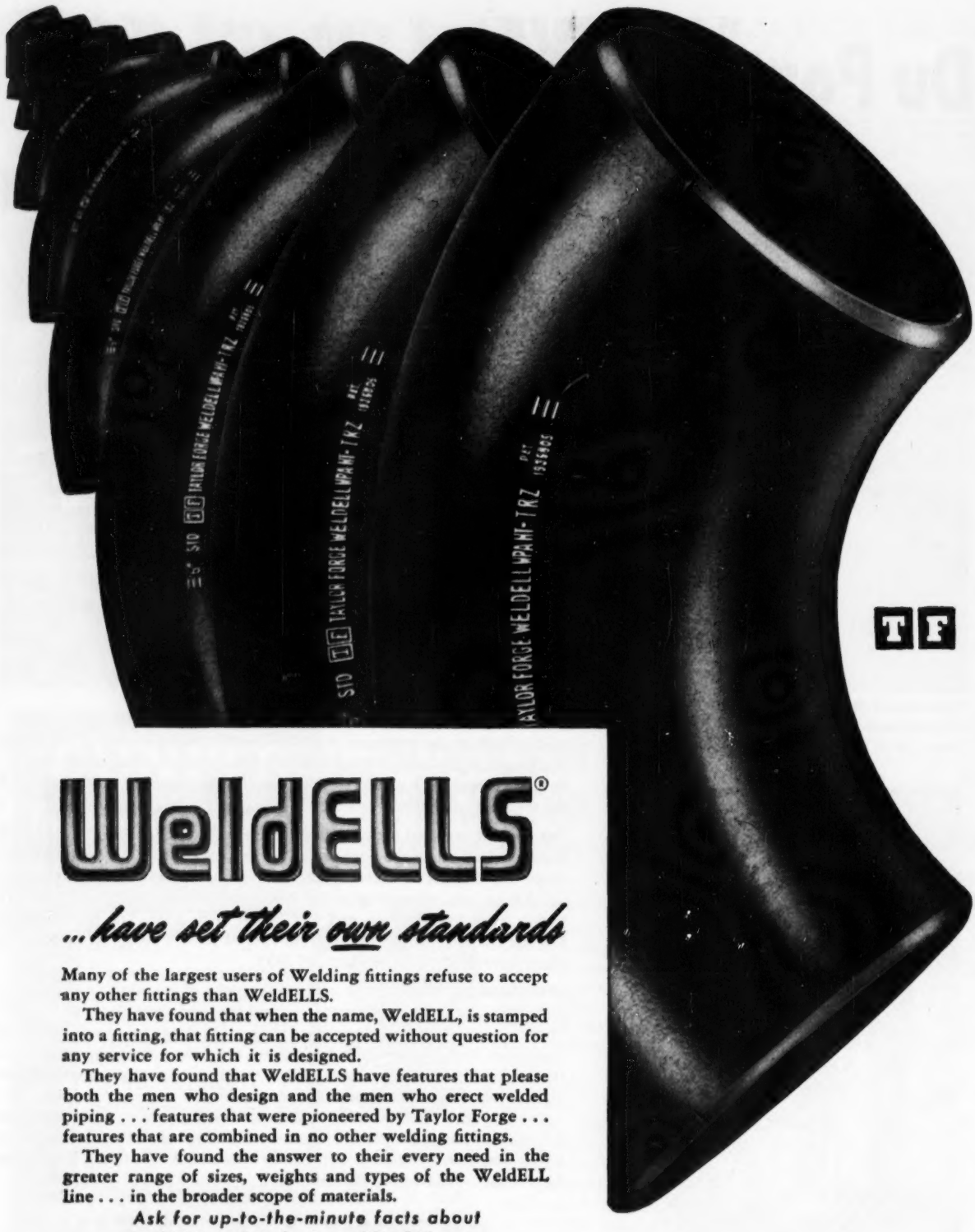

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Offices in all principal cities. Plants at: Carnegie, Pa.; Fontana, Calif.; Hamilton, Ont., Canada

(Continued from page 116)

tion, EDMONTON, ALTA. Govt. of Canada, Dpt. National Defence AIR, Ottawa, Ont. CD 3/3/48.

Quonset Sales Co. of Alberta Ltd., Hart Block, Edmonton, Alta., CA, Approx. $130,000, four standard explosive storage bldgs. at air base, NAMAO, ALTA. Defence Constr. Ltd., Kensington Bldg., Winnipeg, Man. Bids Nov. 4, awarded Dec. 20. CD 10/17.

Dominion Bridge Co., Ltd., 2459 Boundary Rd., Burnaby, B. C. CA. $240,000, supply 13,900 ft. of 42- and 34-in. inside steel pipe for building new water line in Little Mountain Area;

Armco Drainage & Metal Products, 8811 Laurel St., Vancouver, B. C., CA. $43,839, supply 6,170 ft. 14- to 18 in steel pipe for water line under Pattullo bridge in Surrey and Delta areas, VANCOUVER, B. C. Greater Vancouver Water Dist., 500 Beatty St., Vancouver, B.C. Bids Dec. 11, awarded Dec. 29. CD 11/20.

Bird Constr. Co., Ltd., 7 Sargent St., Winnipeg, Man., CA. $279,040, underground steam distr. sys., R.C.A.F. Station, WINNIPEG, MAN. Govt. of Canada Dpt. National Defence AIR, Ottawa, Ont. CD 9/24.

Modern Constr. Ltd., Salisbury Rd., Moncton, N. B., CA, Approx. $400,000, standard drill and recreation hall plus general store at air force base, CHATHAM, N. B. Defence Constr. Ltd., 1032 Gottingen St., Halifax, N. S. Bids Nov. 27, awarded Dec. 20. CD 11/12.

NEWFOUNDLAND—Dpt. P. Wks., St. John's,

Concrete Products Newfoundland Ltd., St. John's, Newfoundland, CA. $500,000, bridge across Gander River Glenwood. Bids Sept. 30. CD 9/16.

BUILDINGS

LOW BIDS AND CONTRACTS

Ferry Constr. Co., Ltd., 1903 Ninth Ave. S., Lethbridge, Alta. CA, Approx. $528,000, 44 concrete, brick DWELLINGS, 12 and 13 Aves. S., 15 and 17 Sts., LETHBRIDGE, ALTA. Sam & Yee Tong Hong, 1903 9 Ave. S., Lethbridge, Alta.

▲ **Elliott Constr. Co. Ltd.**, 241 John St., Hamilton, Ont., Own Forces, Separate Contracts, $1,056,000, 132 one and half story, concrete, brick DWELLINGS, on Broker Park; $512,000, 64 one and half story, concrete, brick DWELLINGS on Elliott Heights, HAMILTON, ONT.

Famous Tile Co. Ltd., 749 Bathurst St., Toronto, Ont., Own Forces, Separate Contracts, $700,000, HOUSING DEVELOPMENT, Maurice Dr., OAKVILLE, ONT. E. I. Richmond, 455 Spadina Ave., Toronto, Ont., archt.

ALASKA

BIDS ASKED—HEAVY CONSTRUCTION

† **Alaska, Kodiak**—LIGHTING SYSTEM—B.A. 2/27—P. Wks. Officer, 17th Naval Dist., Kodiak, lighting systems for streets and an airfield.

AMERICANS ABROAD

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Utah Constr. Co.**, 593 Market St., San Francisco, Calif. has negotiated a five-year contract with Republic of Korea to rehabilitate and operate two tungsten mines in KOREA. $50,000,000. Republic of Korea, Seoul.

Proposed Projects

WATER SUPPLY

Calif., Forest Hill—Forest Hill Public Utility Dist., Forest Hill, voted $225,000 bonds, water system.

▲ **Calif., Santa Barbara**—City, impr. water supply facilities (1) filter plant and reservoir, $940,000; (2) Mesa reservoir, $625,000 (3) transmission mains $1,288,000 (4) distribution mains, $107,000 (5) pump station, $43,000 (6) softening facilities at Sheffield Plant, $284,000; (7) softening facilities at Lauro plant. Total est. $4,035,000. James M. Montgomery, 15 N. Oakland St., Pasadena, consult. engr.

▲ **Kan., Lawrence**—City, water plant, sewage plant imprvs. $3,000,000, Black & Veatch, 4706 Broadway, Kansas City, Mo., consult. engrs.

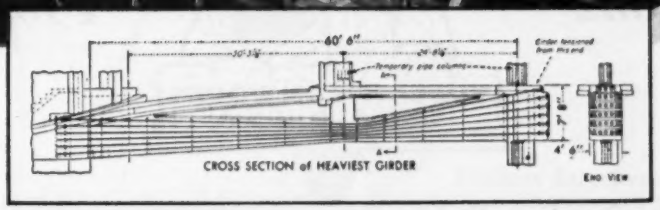
Md., Annapolis—City, Court House, imprv. water and sewage tanks, incl. pumps, lines, gunite work, $110,000, Whitman, Requardt & Assoc., 1304 St. Paul St., Baltimore, engrs. John C. Keefe, Court House, ch. engr.

O., Troy—City, City Hall, WW imprvs., addns. to treatment plant, 12 and 16 in. feeder mains, either 500,000 or 1,000,000 gal. clear water reservoir. $450,000. Finkbeiner, Pettis & Strout, 518 Jefferson St., Toledo, engrs. CD 5/7.

Okla., Ardmore—City, defeated bonds Dec. 16, water main extens. $221,407. W. R. Holway, 302 E. 18 St., Tulsa, consult. engr. CD 12/10.

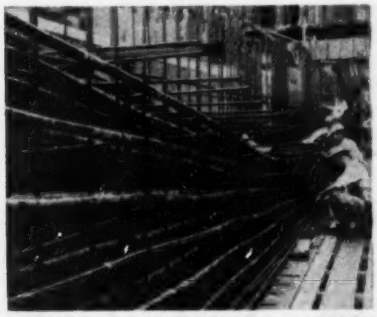
S. C., Charleston—Comrs. P. Wks., 14 George St., WW tunnel, from Foster Creek to Goose Creek Reservoir, Charleston and Berkeley Counties. $700,000. F. B. McDowell, c/o owner, engr.

Tex., Houston—Harris County Fresh Water Dist. 26, Westheimer Rd., (d) water distr. sys. $125,000, (e) water mains, $155,000, (f) elevated water storage, $65,000 (h) WW rehabilitation, $75,000, near here. Frank J. Metyko, Scanlan Bldg., consult. engr. CD 11/25.



HEAVIEST PRESTRESSED CONCRETE GIRDERS VIBRATED with TWO RUBBER TIPPED VIBER VIBRATORS

"Rubber tips were essential to avoid any possible damage to protective covering on prestressing cables," says W. H. Ellison, of Ellison and King, consulting engineers on San Francisco garage built by Barrett and Hilp, general contractors.



"PROPER VIBRATION ABSOLUTELY NECESSARY in PRESTRESSED GIRDER CONSTRUCTION,"

says consulting engineer Ellison.

In designing the heaviest prestressed girders used thus far in the U.S. if not in the world, placement of concrete was a very critical problem. With as many as 28 1½" cables, plus normal reinforcing bars, thorough vibration was a must to insure good quality, high strength, uniform concrete throughout the entire section of the heavy girders. During placement of the concrete Viber rubber-tipped vibrators were inserted, then turned on and slowly withdrawn to minimize danger of damage to cables and covering.

RUBBER TIPS PREVENT DAMAGE to CABLE COVERING

To prevent bonding, cables were greased and wrapped with two layers of siselkraft paper. Use of rubber tipped vibrators minimized any possible damage to this covering during vibration of concrete. Such damage could have resulted in bonding with the concrete and interfered with proper tensioning of the cables.

Replaceable rubber tips are an exclusive development of VIBER Company and another example of the aggressive design and planning that has made VIBER a leader.

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KINNEAR ROLLING DOORS

▲ **Tex., Lubbock**—City, water supply field, $1,919,000; water mains, distr. sys., exten. main water line into city, $1,750,000. H. N. Roberts & Assoc., Lubbock, and Parkhill, Smith & Cooper, 1414 Ave. J, consult. engrs. CD 12/18.

▲ **Sask., Regina**—Prairie Farm Rehabilitation Administration McCallum Hill Bldg., pumping station intake pipe, pipe line and open canal South Saskatchewan River to Buffalo Pound Lane, site of new Regina water supply project, $1,250,000. Dr. L. Thompson, c/o owner, dir.

SEWERS, WASTE DISPOSAL

▲ **Ill., Chicago**—Sanitary District of Chicago, 910 S. Michigan St., 500,000 ft. sewer to halt pollution of Calumet Slough near Blue Island, $300,000 Calumet Interceptor Sewer, 3½ mi. s. of Calumet Treatment Works, to 151 St., $2,200,000; sewer from Calumet Treatment Works to Little Calumet River for plant flow during storms, $1,400,000; Howard St. Interceptor Sewer, serving Chicago, Northfield, Northbrook, Glenview, Golf, Morton Grove, Niles, $7,800,000; sewer and pumping station to eliminate pollution from Little Calumet River and Sag Channel, $460,000; Pratt Ave. Syphon under North Shore Channel, $192,000; completion West-South West Stickney Works, incl. addn. sludge disposal facilities, $7,015,000; Racine Ave. pumping station exten., $1,870,000; Salt Creek Interceptor ½ mi. sewer from Salt Creek at 43 and Grove Sts., $219,000; Lyons Outlet Sewer, $851,000; McCook Outlet, iron sewer under main channel to intercept McCook Sewage, $223,000; Lawrence Ave. extension, $585,000; 2,500 ft. sewer south of Blue Island reducing pollution of Main channel, $225,000; two sewers to intercept from Hervey-Blue Island and Riverdale, $227,000; 5,000 ft. sewer to intercept sewage now entering S. Branch of Chicago River, $440,000; 3,200 ft. sewer in Roosevelt and Maxwell Sts. to intercept sewage now going into S. Branch of Chicago River, $250,000; Halsted and North Water St., 1,700 ft. sewer, East North Water St. from Lakeshore bridge to Fairbank Court 110 ft. sewer, $250,000; control equipment at North Side Interceptor connection with city sewers, $119,000; controls north side interceptor preventing raw sewage from getting into North Branch Chicago River, $215,000. CD 2/8/51.

Ill., Mount Pulaski—City, City Hall, sewage treatment works and sanitary sewerage sys. $400,000. Crawford, Murphy & Tilly, 400½ E. Adams St., Springfield, consult. engrs.

Mass., Newton—City, Street Comrs., City Hall, sanitary sewers Halper Rd., Cross Hill Rd. to end Nardone Rd. to Olde Field Rd.-Thomas St., Manhattan Rd. $150,000.

N. Y., Avon—Village, sewerage sys. and treatment plant. $335,000.

▲ **N. Y., White Plains**—Bd. Supervs., Westchester Co., County Bldg., extens. and redevelopment of Blind Brook trunk sewer at Rye. $1,180,000. CD 1/12/44.

▲ **O., Bowling Green**—City, Clarence Dick, mayor, sanitary and storm sewerage sys. imprvs. $1,778,100. Finkbeiner, Pettis & Strout, 518 Jefferson St., Toledo, consult. engrs.

O., Mansfield—Dpt. Welfare, State Office Bldg., S. Front St., Columbus, sewage disposal plant. $500,000.

O., Port Clinton—City, sewage treatment plant, $400,000. Finkbeiner, Pettis & Strout, 518 Jefferson St., Toledo, consult. engrs. CD 11/12.

Okla., Collinsville—City, voted bonds Dec. 19, sewage disposal plant. $171,000. Fell & Wheeler, 12 N. Elwood St., Tulsa, consult. engrs.

▲ **Tenn., Paris**—City, City Hall, sanitary sewer imprvs. $1,000,000. Allen & Hoshall, 65 McCall Pl., Memphis, consult. engrs. CD 11/11.

Tex., Arlington—Arlington Development Co., c/o Robert B. Holland, Jr., Gulf States Bldg., Dallas, sanitary sewers, $90,000; storm sewers, $80,000, 175-acre tract development.

Tex., Dallas—Dallas Housing Auth., 2525 Lucas Dr., sanitary sewers, $65,000; storm sewers, $60,000. Contrs. 9-11, in 356 acre tract. CD 11/26/51.

Tex., Fort Worth—City, c/o W. O. Jones, mgr., City Hall, storm sewers in Hampshire Blvd. and Wheeler St. $140,000, Joe J. Rady, 511 Insurance Bldg., consult. engr.; storm sewers in Lake Como-Ridgeway Manor addn., $173,880, Scott, Palmer & McDonald, 3400 A, Camp Bowie, Fort Worth, consult. engrs.; storm sewers in Trueacres-Childress-Vaughn Blvd. area, $186,300, Wyatt C. Hedrick Co., 1005 First Natl. Bank Bldg., consult. engr.; storm sewers in Forty Oaks Addn., $120,000, Carter & Burgess, 805½ Throckmorton St., consult. engrs. CD 9/17/51.

Tex., Houston—Joe L. Allbritton & Assoc., Sterling Bldg., storm sewers, $75,000; sanitary sewers, $85,000, near here.

Tex., Houston—Harris County Fresh Water Dist. 26, Westheimer Rd., (a) sewage disposal plant, $140,000, (b) sanitary sewer collection lines, $200,000, (c) water supply and pumping, $80,000, (g) sanitary sewerage sys. rehabilitation, $75,000, (i) storm drainage, $85,000, near here. Frank J. Metyko, Scanlan Bldg., consult. engr. CD 11/25.

Tex., Lubbock—City, sewage disposal plant, $225,000; sanitary sewer line exten., $300,000. H. N. Roberts & Assoc., Lubbock, and Parkhill, Smith & Cooper, 1414 Ave. J, consult. engrs. CD 12/18.

Tex., Odessa—City, voted bonds (d) sanitary sewer mains and collection lines, $302,000 (e) sanitary sewer intercepter lines, $145,000 (g) outfall sewer line, $115,000 (i) storm sewers, $384,000. Parkhill,

(Continued on page 122)

"she might have been my kid..."

"There was no time to stop, see? She comes running out from behind this parked car right under my wheels. Her hair is in pigtails, and with the sun shining on it, she might have been *my* kid. We got her to the hospital. It took 3 pints of blood to bring her around. All I have to do is remember the sound of those screaming tires—and I know why *I'm* giving blood."

Yes, all kinds of people give blood—truck drivers, office workers, salesmen. And—for all kinds of reasons. But whatever *your* reason, this you can be sure of: Whether your blood goes to a local hospital, a combat area or for Civil Defense needs—this priceless, painless gift will some day save an American life!

Business Executives! ✓Check These Questions!

If you can answer "yes" to most of them, you—and your company—are doing a needed job for the National Blood Program.

- ☐ Have you given your employees time off to make blood donations?
- ☐ Has your company given any recognition to donors?
- ☐ Do you have a Blood Donor Honor Roll in your company?
- ☐ Have you arranged to have a Bloodmobile make regular visits?
- ☐ Has your management endorsed the local Blood Donor Program?
- ☐ Have you informed your employees of your company's plan of co-operation?
- ☐ Was this information given through Plant Bulletin or House Magazine?
- ☐ Have you conducted a Donor Pledge Campaign in your company?
- ☐ Have you set up a list of volunteers so that efficient plans can be made for scheduling donors?

Remember, as long as a *single* pint of blood may mean the difference between life and death for *any* American . . . the need for blood is *urgent!*

Give Blood Now

CALL YOUR RED CROSS TODAY!

NATIONAL BLOOD PROGRAM

(Continued from page 120)

Smith & Cooper, Gibson Bldg., Lubbock, consult. engrs. K. E. Esmond, c/o owner, engr. CD 12/22.

Wis., Theresa—Village, Village Hall, sewers, sewage treatment plant, $183,000. Baxter & Woodman, Crystal Lake, Ill., consult. engrs.

BRIDGES

OKLAHOMA—State Hy. Dpt., Capitol, Oklahoma City, **Caddo Co.**—bridge over Washita River, Hy. 281, Anawarko, $100,000.
Creek Co.—bridge over Polecat Creek on No. 66 near Depew, $90,000.
Osage Co.—bridge over Cimarron River on State Hy. 18, $175,000. G. H. Bittle, Capitol, Oklahoma City, engr.
Okla., Oklahoma City—City, City Hall, overpass over Rock Island Lines at Byers Ave. $175,000. W. W. Baker, city engr.
▲ **WASHINGTON**—Washington State Toll Bridge Auth., Olympia,
2 mi. floating bridge over Puget Sound, suspension bridges over Colvos and Rich Passages between Seattle and Olympia, $82,000,000. Ralph Smillie, 76 9 Ave., New York, N. Y., John Parcel, Syndicate Trust Bldg., St. Louis, Mo., Ralph A. Tudor, 74 New Montgomery St., San Francisco, Calif., consulting engineers submitted report. CD 3/31/48, under Unclassified.
▲ **WEST VIRGINIA**—State Rd. Comn., Charleston, **Putnam Co.**—bridge over Kanawha River. $2,600,000. Harrington & Cortelyou, Dwight Bldg., Kansas City, Mo., engrs.
▲ **Alta., Calgary**—City, City Hall, bridge across Bow River at 14 St. West $2,000,000. J. Ivor Strong, city engr.

STREETS AND ROADS

La., Kaplan—Town, pave 6 mi. streets, $124,000, J. B. McCrary Co., Atlanta Federal Savings Bldg., Atlanta, Ga., consult. engr.
NORTH CAROLINA—State Hy. & P. Wks. Comn., Raleigh,
Martin and Bertie Counties—four-lane highway from Williamston to Windsor, $250,000.
▲ **O., Toledo**—City, City Hall,
1953 STREET PROGRAM
Bancroft St., wid'n. from Clinton St. to Upton Ave. $50,000.
W. Bancroft St., resurf. from Upton Ave. to Secor Rd. $100,000.
Berdan Ave., repave (Wolcott Blvd. exten.) to Ten-Mile Creek, $132,000.
City Park Ave., resurf. from Anthony Wayne Trail to Dorr St., $46,000.
Detroit Ave., resurf. from Monroe to Buckingham Sts., $100,000.
Franklin Ave., resurf. from Adams to Cherry Sts., $55,000.
Hawley St., resurf. from Western Ave. to Dorr St., $77,000.
Huron St., wid'n. and resurf. from Cherry to Ash Sts., as feeder to North Toledo Expressway, $70,000.
Jefferson Ave., resurf., from Collingswood to Ontario St., $36,000.
Jefferson Ave. exten. to Monroe St., $145,000.
LaGrange St., resurf. from Champlain St. to Manhattan Blvd., $110,000.
Michigan St., resurf. and wid'n. from Washington to Adams Sts., $72,000.
Navarre Ave., wid'n. and repave from Woodville Rd. to Toledo Belt R.R., $240,000.
Oak St., resurf., from Fasset St. to city line, $36,000.
Sherwood Rd., pave from Detroit Ave. to River Rd., $157,500.
South Ave., resurf. from Anthony Wayne Trail to Detroit Ave., $66,000.
Summit St., resurf. from Bay View Park to 131 St., $80,000.
Wayne St., resurf. from Westwood Ave. to Hanover St., $36,000.
resurface residential streets throughout city, $150,000. M. J. Curtis, city street div. engr. CD 10/17/49.

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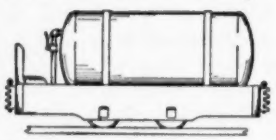

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MAYO TUNNEL & MINE EQUIPMENT LANCASTER, PA.

TENNESSEE—State Hy. Dpt., Nashville, **Hamilton Co.**—highway between Red Bank and Chickamauga Dam. $100,000.

Tex., Arlington—Arlington Development Co., c/o Robert B. Holland, Jr., Gulf States Bldg., Dallas, street and road constr., paving, 175-acre tract. $110,000.

Tex., Houston—Joe L. Allbritton & Assoc., Sterling Bldg., street and road constr., hard-type paving, near here, $100,000.

Tex., Odessa—City, voted bonds, (h) street imprvs., some paving, $150,000. Parkhill, Smith & Cooper, Gibson Bldg., Lubbock, consult. engrs. K. E. Esmond, Odessa, engr. CD 12/22.

EARTHWORK, WATERWAYS

▲† **Delaware and Maryland**—U. S. Eng., 121 N. Broad St., Phila., Pa., deepening Chesapeake and Delaware Canal, widening present 25 ft. channel to 450 ft., replace all movable span bridges, with high level fixed structures, provide an anchorage basin in Elk River, Md., Cecil and New Castle Counties. $96,000,000. CD 11/24.

O., Toledo—Comrs. Lucas, Wood and Ottawa Counties, Court House, Toledo, deepen and widen Crane Creek (1) clean and deepen existing channel, $154,503, (2) build dikes adjacent to Crane Creek, $41,293, (3) build jetties at mouth of Lake Erie, $111,247. Guy Neeper, Lucas Co. engr., Toledo, B. F. Henning, Wood Co. engr., Bowling Green, and Delos J. Nissen, Ottawa Co. engr., Port Clinton. CD 1/11/51.

▲ **Ont., Galt**—Grand River Conservation Comn., William Philip, chn., Galt, concrete Conestogo Dam, near Glen Allen. $5,000,000. H. G. Acres & Co., Niagara Falls, consult. engrs. CD 6/30/44, under Ont., Brantford

AIRPORTS

▲† **Idaho, Mountain Home**—OPERATIONAL APRON, etc. —U. S. Eng., City-County Airport, Walla Walla, Wash., operational apron, $1,000,000; runway strengthening, $500,000; utilities, $500,000; central heating plant, $500,000; refueling apron, $500,000; operational apron, $500,000; maintenance apron, $1,000,000 refuel hyd. MB, $1,000,000; aviation gasoline storage, $100,000; jet fuel storage, $100,000; apron grid, $100,000; post exchange, $100,000; officers mess, $100,000; laundry and dry cleaning bldg., $100,000; training bldg., $100,000; refueling system, $100,000; 2.5 mi. roads, $100,000; chapel, $100,000; strengthen taxiway, $100,000; strengthen apron park, $100,000 airfield lighting, $100,000, all at Mountain Home Air Force Base.

† **Okla., Norman**—HANGAR—Dpt. Navy, 8th Naval Dist., Bldg. 16, Naval Station, New Orleans, La., plans by Coston & Frankfurt, 328 E. Madison St., Oklahoma City, hangar at Air Training Center. $100,000.

Tex., Houston—APRON PAVING—City, City Hall, 900 Brazos St., apron paving, municipal airport. $410,000.

† **Tex., Mission**—JET FUEL STORAGE, etc.—U. S. Eng., 606 Santa Fe Bldg., Galveston, plans by George Rhine & Co., archts.-engrs., 209 San Pedro Ave., San Antonio, design of jet fuel storage facilities, base maintenance hangar, squadron maintenance hangars, jet engine test cell and service utilities. CD 12/24.

▲† **Va., Oceana**—BUILDINGS—P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk, plans by Hayes, Seay, Mattern & Mattern, 410 Coulter Bldg., Roanoke, addnl. bldgs., at Naval Air Station, $1,300,000.

† **Wash., Tacoma**—HANGAR, etc.—U. S. Eng., 4735 E. Marginal Way, Seattle, Zone 4, readiness hangar $150,000, 40,000 sq. ft., rein.-con. base maintenance shop, $300,000, McChord Air Force Base.

LATIN AMERICA

▲ **Ecuador, Guayaquil**—Republic of Ecuador, Quito, plans removal of docks from present waterfront on the Guayas River to estuary of the Pacific 2 mi. on the other side of Guayaquil. $3,000,000.

Mexico, Puebla—Instituto Mexicano de Seguro Social (Mexican Social Insurance Institute), Mexico City, plans 100-bed hospital. $500,000.

▲ **Mexico, Temazcal**—Mexican Govt., Comision Federal de Electricidad (Federal Electricity Commission), Mexico City, plans 120,000 kvt electricity generating plant. $13,870,000.

PUBLIC BUILDINGS

Calif., Los Angeles—COUNTY COURTS—Los Angeles Co., Hall of Records, plans by Albert Criz & Assoc., 2523 W. 7 St., county courts bldg. in Van Nuys, $540,000.

Calif., Pacific Grove—SCHOOLS—Pacific Grove Unified School Dist., Pacific Grove, schools. $772,000. CD 3/20/47.

▲ **Fla., Cocoa**—SCHOOLS—Brevard Co. Bd. P. Instruction, Cocoa, plans by Griffin & Gomon, P.O. Box 1671, Daytona Beach, Cocoa White High School, $735,000; Merritt Island Elementary School, $300,000; Cocoa Negro High School, $375,000.

▲ **Ill., Oaklawn**—SCHOOLS—School District 111, 85 St., plans by Thos. J. Higgins, 228 N. La Salle St., Chicago, Zone 1, five schools in Stickney Twp. $1,000,000.

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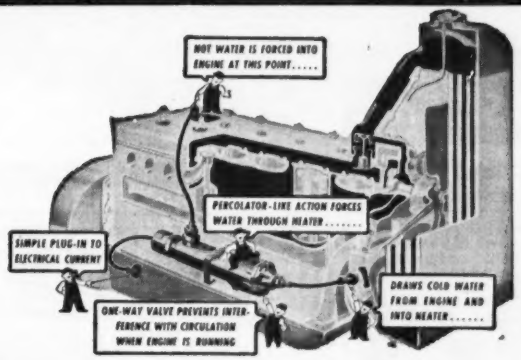
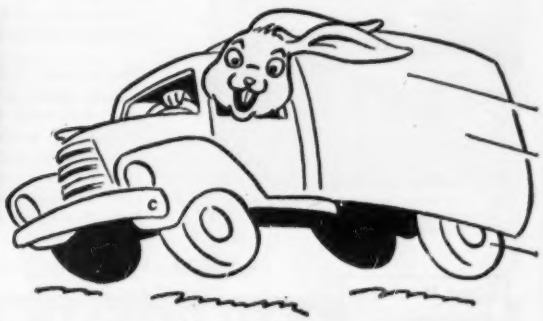

HOT WATER IS FORCED INTO ENGINE AT THIS POINT.....
PERCOLATOR-LIKE ACTION FORCES WATER THROUGH HEATER.....
SIMPLE PLUG-IN TO ELECTRICAL CURRENT
DRAWS COLD WATER FROM ENGINE AND INTO HEATER.....
ONE-WAY VALVE PREVENTS INTERFERENCE WITH CIRCULATION WHEN ENGINE IS RUNNING



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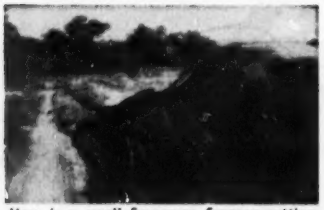

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La., Crowley—SCHOOL—Acadia Parish School Bd., voted $975,000 bonds, school imprvs. CD 11/11.

▲ La., Houma—SCHOOL—Terrebonne Parish School Bd., voted $1,400,000 bonds, school imprvs.

▲ Md., Baltimore—SCHOOL—City, Bureau Bldg. Constr., 410 Municipal Bldg., plans by Adams & Riggs, 2513 N. Charles St., 2 and 3 story, brick, block, concrete, steel Woodbourne Junior High School, Woodbourne and Beauregard Aves. $1,400,000, Van Renselaer Saxe, 1701 St. Paul St., struct. engr. Thos. S. George, 2505 N. Charles St., mech. engr. R. E. L. Williams, 410 Municipal Bldg., constr. engr.

Md., Baltimore—SCHOOL—City, Bureau Bldg. Constr., 410 Municipal Bldg., Zone 2, plans by Hal A. Miller & Assoc., 2118 Maryland Ave., School No. 144 addn., Mosher St. and Wheeler Ave. $750,000. R. E. L. Williams, bldg. constr. engr.

▲ Md., Towson—SCHOOL—Baltimore Co. Bd. Educ., Aigburth Rd., plans by Palmer, Fisher, Williams & Nes, 1020 St. Paul St., Baltimore, Patapsco Neck High School, Lodge Farm and North Point Rd. $1,500,000.

Mass., Brockton—SCHOOL—City, A. E. Nelson, supt. schools, plans by M. A. Dyer Co., 24 School St., Boston, brick, steel, concrete Junior High School. $500,000. CD 10/1.

▲ Mich., Algonac—SCHOOLS—Bd. Educ., Algonac School Dist., $1,500,000 bond election in January elementary school, Fair Haven, $400,000; brick, masonry elementary school, Pointe Tremble, $300,000; Junior High School and elementary school facilities, swimming pool, cafeteria and gymnasium, $800,000.

▲ Mich., Ionia—HOSPITAL—State, A. N. Langlus, dir. State Bldg. Dpt., Lansing, plans by Clair W. Ditchy, 5 W. Larned St., Detroit, brick, steel, concrete men's hospital unit, Ionia State Hospital. $2,000,000. CD 5/27.

▲ Mich., Mount Pleasant—DORMITORY, etc.—State, A. N. Langius, dir. State Bldg. Dpt., Lansing, brick, steel men's dormitory and food unit, $1,250,000; brick, steel, stone library, college campus, $1,000,000; brick, steel music-dramatic arts bldg., $500,000, Central Michigan College.

▲ Minn., Duluth—LIBRARY, etc.—Regents of University of Minnesota, J. L. Morrill, pres., Admin. Bldg., Main Campus, Minneapolis, library, $800,000; science bldg. addn., $500,000; student center, $800,000, subject to approval of state legislature.

▲ Minn., Minneapolis—LAW SCHOOL, etc.—Regents of University of Minnesota, J. L. Morrill, pres., Admin. Bldg., Main Campus, law school addn., $745,000; main engineering bldg. addn., $720,000; chemical storage bldg., $528,000; medical-dental- biological library, $800,000, subject to approval of state legislature.

▲ Minn., St. Paul—HEATING PLANT, etc.—Regents of University of Minnesota, J. L. Morrill, pres., Admin. Bldg., Main Campus, Minneapolis, heating plant and tunnels, $1,500,000; Haecker Hall (dairy bldg.) addn., remodeling, $875,000; agricultural biochemistry and soils bldg., $1,000,000, subject to approval of state legislature.

▲ N. Y., Brooklyn—MORTUARY—Dpt. Hospitals, Municipal Bldg., New York, Zone 7, plans by DeYoung, Moscowitz & Rosenberg, 205 E. 42 St., New York, Zone 17, 5 story mortuary, chapel, laboratories and auditorium, 442-72 Winthrop St., Proj. HO-102, Kings County Hospital. $3,000,000. CD 11/9/44.

O., Youngstown—HIGH SCHOOL—Bd. Educ., 20 W. Wood St., plans by Scheibel & Shaffer, Realty Bldg., West High School, S. Hazelwood Ave. $900,000. CD 5/15/47.

O., Youngstown—SCHOOL—Bd. Educ., 20 W. Wood St., plans by P. Arthur D Orazio, Union Natl. Bank Bldg. Kirkmere grade school, Kirk and Schenley Sts. $500,000. CD 11/10.

Pa., Carnerie—SCHOOL—School Dist. of Scott Twp., High School Bldg., Washington Ave., plans by Joseph W. Hoover, 333 Blvd. of Allies, Pittsburgh, brick, block grade school. $500,000.

Pa., Cochranton—SCHOOL—Cochranton Consolidated School Dist., plans by Kling & Frost, 661 Wick Ave., Youngstown, O., Junior-Senior High School. $900,000.

Pa., Perryopolis—SCHOOL—School Dist. of Perry Twp., plans by Altman & Altman, 206 Derrick Ave., Union-

town, 2 story, bsmnt., brick, steel, concrete Junior-Senior High School. $500,000.

Tenn., Benton—SCHOOL—Polk Co. Bd. Educ., Benton, voted bonds, elementary school. $500,000.

▲ Tex., Orange—HOSPITAL—Orange Co., Orange, bond issue held up, may set new date soon, 200-bed Orange County hospital. $2,500,000. J. M. Morris, c/o owner, consult. archt. CD 12/1.

Wash., Ellensburg—SCIENCE—Central Washington College of Education, Ellensburg, science building. $750,000.

▲† Wash., Richland—PLANT—Atomic Energy Comn., Pentagon, Wash., D. C., plant expansion of Hanford Works. $110,000,000.

▲ Alaska, Anchorage—SCHOOL—Independent School Dist., Anchorage, voted bonds, elementary school in Airport Heights. $1,800,000.

▲ Alta., Calgary—HOSPITAL—Calgary General Hospital Bd., Dr. L. O. Bradley, administrator, General Hospital, Calgary, hospital addns., laundry, new nurses residence conversion of two wings and new isolation ward bldg. $3,000,000.

Ont., Brantford—NURSING HOME—Brantford City Council, Ald. John Noble, chn. Building Com., plans by Fred C. Bodley, 88 Nelson St., 1 story, brick, Brant County Nursing Home, boiler room, laundry and cold storage plant. $550,000. CD 6/30.

COMMERCIAL BUILDINGS

▲ Ark., Jacksonville—HOUSING—Elbert Fausett, 215 Louisiana St., Little Rock, 200-unit housing. $1,500,000.

▲ Ark., Little Rock—HOTEL—Southwest Hotels, Inc., Markham St., plans by Wittenberg, Delony & Davidson, Pyramid Bldg., Albert Pike Hotel addn. $2,000,000.

▲ Calif., Fresno—HOTEL—Handlery Hotels, c/o Californian Hotel, Van Ness and Kern Sts., California Hotel addn., 825 Van Ness Ave., $1,000,000.

Calif., Monterey—HOTEL—Mark Thompson Monterey, hotel, $750,000.

▲ Ill., Belleville—MEMORIAL HOSPITAL—Protestant Hospital Builders, c/o Bd. Directors, Edward Kaufman, chn., 918 Freeburg Ave., plans by Schmidt & Krueger, 6376 Clayton Rd., Richmond Heights, 17, Mo., 100-bed capacity Belleville Memorial Hospital, 133-acre tract at end of North 48 St. $1,000,000. CD 10/22/47.

▲ Ind., Muncie—HOSPITAL—Ball Memorial Hospital Bd. Trustees, Muncie, plans by Walter Scholer & Assocs., 1114 State St., Lafayette, 288-bed, 3-story, west wing; 1 story south wing, brick, stone hospital addn., kitchen dietary and waiting room. $4,000,000. CD 12/23.

Miss., Jackson—OFFICE—United Gas Corp., 1525 Fairfield Ave., Shreveport, La., office. $500,000.

▲ Mo., Grandview—LIBRARY—Truman Library Corp. trustees, c/o Tom L. Evans, secy., 125 E. 31 St., Kansas City, Mo., president's papers library, US 71 and Blue Ridge Blvd. $1,500,000.

▲ Mo., Joplin—PROFESSIONAL—Stewart Stanley, 120 N. E. 4 St., plans by Robert Braechel, 1204 Broadway, 5 story, bsmnt., 72,000 sq. ft. professional bldg., Connor, Bird, 20 and 21 Sts., $1,750,000. CD 12/12.

▲ Neb., Omaha—HOSPITAL—Clarkson Hospital, 26 St. and Dewey Ave., plans by L. A. Daly Co., Insurance Exchange Bldg., hospital addn. $1,000,000. CD 11/19.

N. Y., New York—APARTMENT—Yates Constr. Corp., 2226 Holland Ave., Zone 67, plans by Elias K. Herzog, 258 Broadway, Zone 7, 6 story apartment, Pelham Parkway and Yates Ave. $550,000.

▲ Pa., Erie—ADMINISTRATION—Pennsylvania Electric Co., Johnstown, administration bldg. $1,500,000. CD 4/3/50, under Industrial Buildings.

Pa., Pittsburgh — DORMITORY — Carnegie Institute of Technology, Schenley Park, plans by Mitchell & Ritchey, 524 Fourth Ave., 3 story, bsmnt., steel, brick and block men's dormitory. $600,000.

Pa., Pittsburgh — SHOPPING CENTER — Norjay, Inc., Frick Bldg., plans by J. Kenneth Myers, 524 Fourth Ave., 4 bldgs., 40-60 stores, brick, concrete steel, 1 and 2 story shopping center, West Mifflin $4,000,000.

Tex., Fort Worth—COUNTRY CLUB—Western Hill Country Club Assoc., c/o J. T. Luther, 6400 Camp Bowie St., plans by Charles E. Armstrong, Majestic Bldg., Fort Worth, and Burton A. Schutt, 10624 Chain Rd., West Los Angeles, Calif., 1 story, 35,000 sq. ft. masonry, concrete country club in Ridglea Addn., swimming pool, etc. $500,000.

▲ Tex., Houston—DWELLINGS—Chris Hubert, Walter Mischer & Assoc., 6925 Navigation Bldg., (A) 48 dwellings, $375,000, (B) 60 dwellings, $450,000, (C) 40 dwellings, $320,000, (D) 65 dwellings, $500,000, (E) 45 dwellings, $350,000, (F) 38 dwellings, $300,000. new 115-acre tract west of Westwood Addition near Stella Link and Post Oak Rds.

▲ Wis., Whitefish Bay (P.O. Milwaukee)—SCHOOL—Dominican High School Corp., Whitefish Bay, plans by Brimeyer, Grellinger & Rose, 757 N. Broadway, Milwaukee, parochial high school. $1,000,000.

▲ Alta., Lethbridge—HOUSING—L. Wade, c/o Town Planning Comn., Calgary, housing on subdivision between 35 and 12 Aves. S. and between Mayor Magrath Dr. and 35 St. S. $4,000,000.

▲ Ala., Calera—PLANT—Westinghouse Electric Corp., Union Bank Bldg., Pittsburgh, Pa., plans by Warren, Knight & Davis, Protective Life Bldg., Birmingham, plant, $3,000,000. CD 12/16.

INDUSTRIAL BUILDINGS

Calif., Sacramento—STORAGE—Farmers Rice Growers Co-operative, Front and P Sts., rice drying and storage bldg. $855,694.

Ill., Joliet—WAREHOUSE—Central States Steel Co., 15 W. 10 St., Kansas City, Mo., Steel warehouse, $500,000.

(Continued on page 127)

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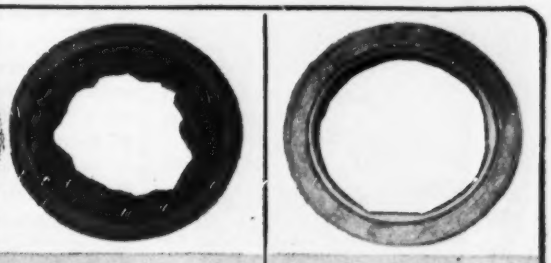

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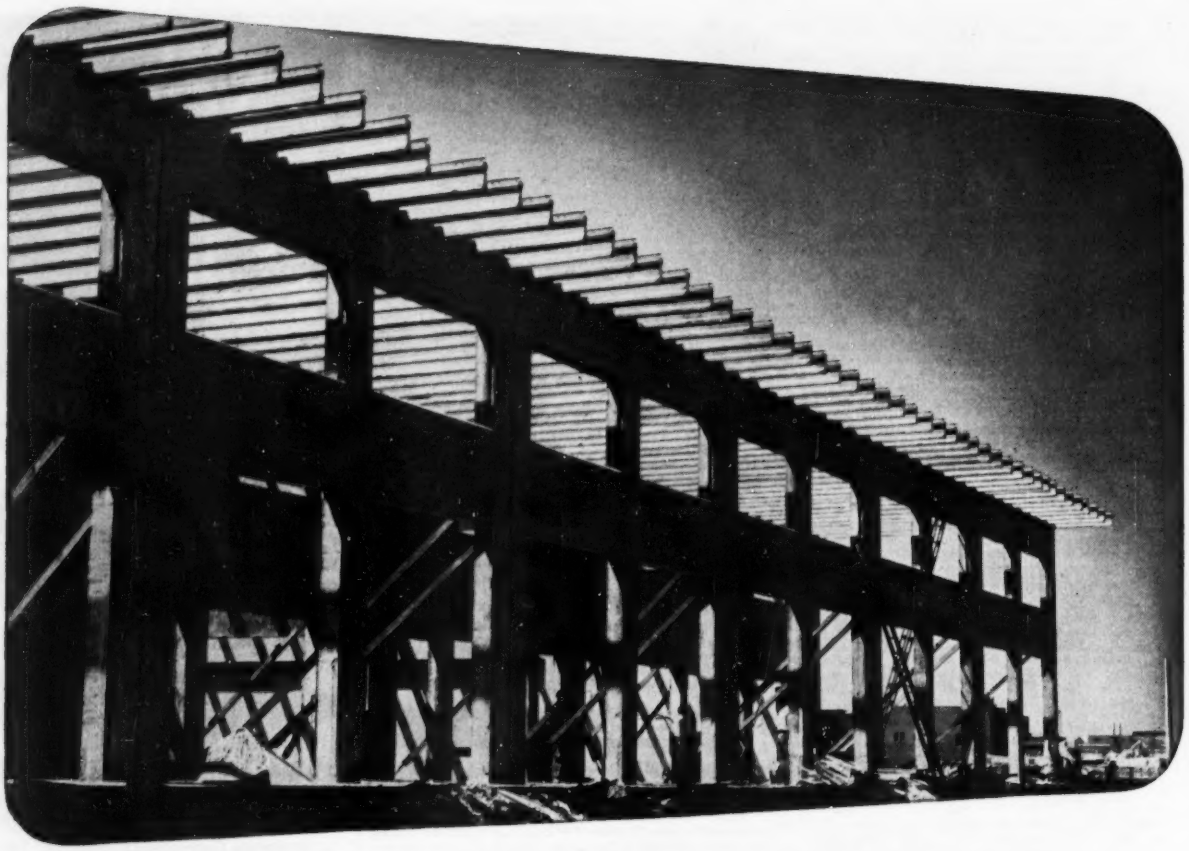

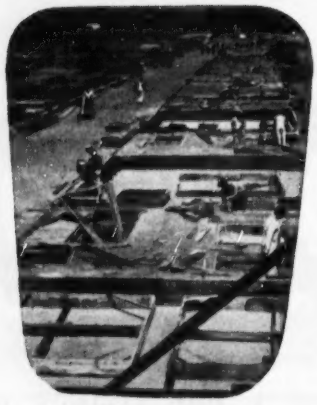

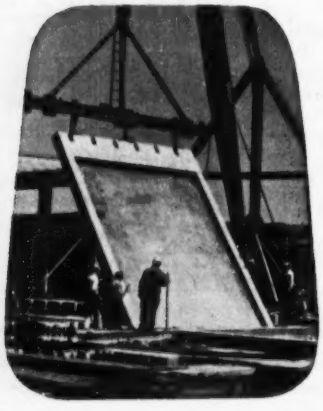

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(Continued from page 125)

▲ **Me., Veazie**—POWER PLANT—Bangor Hydro-Electric Co., 33 State St., Bangor, 13,500 kw steam power plant, Charles T. Main, Inc., 80 Federal St., Boston, Mass., consult. engrs.

Md., Baltimore—GARAGE—Peoples Holding Corp., c/o F. L. W. Moehle & Assoc., archts., 2514 N. Charles St., 5 levels, steel, concrete, masonry off street parking garage, Fayette and Gay Sts. $985,000.

N. Y., New York—GARAGE—Irving Maidman, 1501 Broadway, Zone 36, plans by Herbert J. Krapp, 204 Central Park South, Zone 19, garage, 148 W. 48 St. $410,000.

N. C., Winston-Salem—TRUCK TERMINAL—McLean Trucking Co., Waughtown St., truck terminal addn. $550,000.

▲ **O. Columbus** — PRODUCE TERMINAL — Columbus Wholesale Fruit & Produce Dealers Assn., 50 W. Broad St., produce terminal, $2,300,000.

Pa., Warren—PLANT—United Refining Co., Warren, catalytic plant, $750,000, Blaw-Knox Co., Chemical Div., 321 Penn Ave., Pittsburgh, engr. CD 7/19/44.

▲ **Tex., Goliad**—SHOP, etc.—Goliad Corp., Goliad, general repair shop, $85,000; general storage for gas production facilities, $200,000; butane gas plant unit, $875,000; propane gas plant unit, $1,000,000.

▲ **Ont., Lonoon**—STORAGE—John Labatt Ltd., Simcoe St., plans by John M. Watt, 341 Richmond St., 2 story, brick fermenting and storage bldg. $1,100,000. CD 5/17/46.

Que., Montreal—WAREHOUSE—Union Electric Supply Co. Ltd., 270 Craig St. W., plans by Lazar & Sterlin, 2950 Van Horne Ave., warehouse, Royalmount Ave. off Decarie Blvd. Approx. $600,000.

UNCLASSIFIED

Illinois—TELEPHONE SYSTEM—Egyptian Telephone Cooperative Assn., Steeleville, rural telephone system in Jackson Co and vicinity. $850,000. CD 4/17/47.

Ill., Evanston—FIELD HOUSE—City, City Hall, plans by Perkins & Will, 309 Jackson Blvd., Chicago, Zone 6, 2 story, concrete, brick Foster Field House, bowling, basketball, swimming-billiard facilities, $500,000.

▲ **Missouri**—DISTRIBUTION MAINS—Laclede Gas Co., Robert W. Otto, pres., 103 7 Olive St., St. Louis, Zone 1, exten. distr. mains, services in St. Louis and St. Louis County. $4,500,000. CD 7/24/52.

Mo., St., Louis—TRAFFIC SIGNALS—City, c/o Frank J. McDevitt, pres. Bd. P. Service, 304 City Hall, 12 and Market Sts., Zone 3, installing automatic traffic signals at 45 intersections, $300,000.

N. Y., New York—COMFORT STATION—Dpt. Parks, Arsenal Bldg., plans by Gustave Chirlian, c/o owner, comfort station, Courtlandt Ave. between 154 and 155 Sts. $100,000.

O., Columbus—RECREATION CENTER—City, City Hall, recreation center, W. 5th Ave. in "Battelle City" (land owned by Battelle Memorial Institute to be deeded to city) $300,000. Robert F. Werner, city engr.

Texas—BOOSTER STATIONS—Reef Fields Gasoline Corp., Big Spring, booster stations, in Hobo Field $150,000, in Vealmoor Field $165,000, near Big Spring; in Good Field, Gail west, $200,000; in Reinecke Field, Gail, north, $175,000; oil products storage, near Big Spring, $200,000; railway loading terminal, near Big Spring, $125,000.

Tex., Galveston—LIGHTING SYSTEM—City, City Hall, bond election Feb. 3, mercury-vapor street lighting sys. on portion Broadway. $330,000. Extended bond election date. CD 12/29.

Tex., Goliad—GAS FACILITIES, etc.—Goliad Corp., Goliad, expansion of some addnl. natural gas production facilities $268,000; some gas gathering lines, $100,000.

Tex., Lubbock—ELECTRIC DISTRIBUTION SYSTEM—City, electric distr. sys. exten. $600,000, H. N. Roberts & Assoc., Lubbock, and Parkhill, Smith & Cooper, 1414 Ave. J, consult. engrs. CD 12/18.

Tex., San Angelo—TELEVISION STATION—Station KTXL-TV, San Angelo, television station. $275,000.

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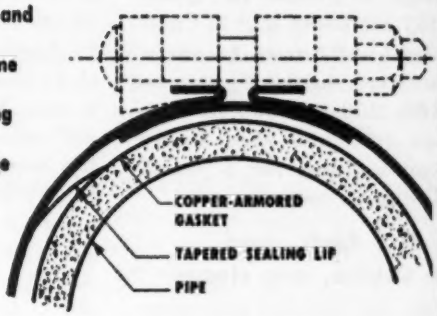

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SMITH-BLAIR, INC.
Main Office and Factory
535 Railroad Ave.
South San Francisco, California
BRANCH:
8241 Phlox St., Downey, Calif.
DISTRIBUTORS IN PRINCIPAL CITIES

SEND FOR CATALOGUE
DESCRIBING SMITH-BLAIR PRODUCTS

NAME:_____
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ADDRESS:_____
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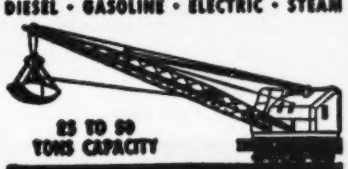
DEPENDABLE
OHIO
LOCOMOTIVE CRANES
DIESEL • GASOLINE • ELECTRIC • STEAM



25 TO 90 TONS CAPACITY

THE OHIO LOCOMOTIVE CRANE CO
BUCYRUS, OHIO

TEST BORINGS
for
• COAL
• MINERALS
• DAMS & BRIDGES
• BUILDINGS
We look into the Earth

PENNSYLVANIA Drilling CO.
DRILLING CONTRACTORS AND MFRS.
PITTSBURGH 20, PA.

PNEUMATIC GROUTER
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MAYO TUNNEL & MINE EQUIPMENT
LANCASTER, PA.

A tip in time to air users who don't want to be stuck

What's happened to the 500 ft. compressor that everyone used to build?

It's gone—completely obsoleted by the "new standard" 600 ft. size introduced by Jaeger in 1946.

What's happening to the other old-time sizes?

They've been slipping ever since Jaeger brought out 15% to 25% higher "new standard" ratings in 1948, to match your modern air tools.

Today, 125 ft. compressors (the size Jaeger originated to replace the 105) are being sold in Canada under 4 well-known American names. Here, in the U. S., new 125, 185, 250 and 365 ft. compressors (the new sizes Jaeger has been building for 5 years) have begun to be announced.

The facts, and the choice, are clear:

1: All 60, 105, 160, 210 and 315 ft. portable compressors are today as out-of-date as the old 500 ft. Their capacity hasn't changed since 1932. They don't give you air enough to run a full set of today's tools at more than 70 lbs. partial pressure.

2: Any compressors that run hot and shake themselves to pieces, in order to meet Jaeger's higher "new standard" ratings, are basically old models that have been speeded up.

3: *At prices in every case below those asked for old standard compressors,* you can buy a "new standard" Jaeger AIR-PLUS, properly engineered to deliver 15% to 25% more air — 75, 125, 185, 250, 365 and 600 cfm at 100 psi.

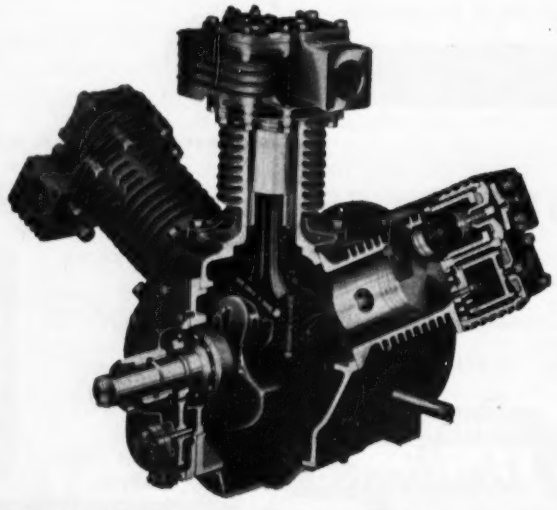
4: This additional air maintains steady 90 to 100 lbs. pressure at today's big tools, gives them maximum speed and hitting power, *actually increases work output 30% to 40% with the same men and tools.*

Jaeger Compressors, and Jaeger only, have been delivering these higher air volumes for 5 years, at easy speeds, at moderate air temperatures, and without apparent effort or vibration. Here's why:

No other compressors, new or old, have these Jaeger-engineered features

- Balanced 2-stage, W-type compressor unit in every size from 75 to 600 ft. (Far smoother than "V" units, in which low and high pressure cylinders are unequally opposed.
- Positive lubrication by gear-driven oil pump, in all sizes.
- Relief valve for automatic intercooler drainage, standard all sizes.
- 75% to 100% larger valves, bigger intercoolers and air receivers to handle 15% to 25% more air and dissipate more heat.
- Reserve horsepower and bigger multi-plate clutches than any other compressors.
- Automatic Fuel Miser standard on all models where control of engine speed effects worthwhile fuel savings.

Why pay more, and get far less, than Jaeger gives you?



JAEGER Balanced "W" Compressor

with an obsolete compressor in 1953

The construction industry needs these 6 "new standard" ratings -- and no more

Model 75 (75 cfm at 100 psi)
Runs a heavy breaker at full efficiency.

Model 125 (125 cfm at 100 psi)
Runs 2 heavy breakers or a 55 lb. sinker at full efficiency.

Model 185 (185 cfm at 100 psi)
Runs 3 heavy breakers, 1 heavy or 2 medium rock drills, at full efficiency.

Model 250 (250 cfm at 100 psi)
Runs a 3½" wagon drill, 2 heavy rock drills or a 10 hp Ka-Mo earth drill at full efficiency.

Model 365 (365 cfm at 100 psi)
Runs a 4" wagon drill plus a plug-hole drill, or operates 15 hp Ka-Mo earth drill — at full efficiency. Also ideal for heavy sand blasting and gunite work.

Model 600 (600 cfm at 100 psi)
Runs two 4" wagon drills plus a hand-held drill, or powers a heavy 9B-3 pile hammer — at full efficiency.

Learn more about operating air tools:
Complete Jaeger Catalog lists many modern types of pneumatic tools and their air requirements for maximum efficiency. Facts given in no other catalog. Ask your Jaeger distributor or write for Catalog JC-1.

THE JAEGER MACHINE COMPANY

200 Dublin Ave., Columbus 16, Ohio

Pumps • Mixers • Truck Mixers • Paving Spreaders and Finishers

Announcing—

The 1953 Annual

REVIEW AND FORECAST ISSUE

of

ENGINEERING NEWS-RECORD

will be published

February 19, 1953

Fifty pages **of special analyses of the year ahead studied against the background of the year just ended.**

Four special sections **that will look at the overall construction picture and the major factors that are affecting it.**

1. **ANOTHER BIG YEAR IN PROSPECT**
2. **CONSTRUCTION AFTER THE DEFENSE BOOM**
3. **MILITARY CONSTRUCTION**
4. **TECHNIQUES AND TRENDS**

Issue Date:

February 19, 1953

ADVERTISERS:

If you are selling to the construction market, this annual issue is a sure way of reaching important construction men with your sales message. Call your EN-R salesman for more information.

Advertising forms close January 29.

ENGINEERING NEWS-RECORD

330 W. 42nd St. N. Y. 36, N. Y.

A McGraw-Hill Publication

UNIT PRICES

San Francisco Bay toll bridge, California

Ben C. Gerwick, Inc., owner of the largest fleet of floating construction equipment on San Francisco Bay, joined with Peter Kiewit to submit the lowest bid on the substructure of the Richmond-San Rafael bridge, San Francisco Bay. The bid was submitted to the California Dept. of Public Works, Division of San Francisco Bay Toll Crossings. Low bid on the superstructure was entered by Judson Pacific-Murphy Corp., Peter Kiewit, and A. Soda & Sons.

Sixty-two bell bottom piers like those on the Chesapeake Bay bridge will be used in the superstructure.

The superstructure consists of cantilever members (two 1,000-ft main spans each with 480-ft side spans), thirty-six 289-ft truss spans, and thirty-six 100-ft long girder spans. When complete the bridge will be about four miles long and double decked with 12 ft traffic lanes on each level; but initially there will be only an upper roadway with an 18 ft lane in each direction.

Structural iron workers are receiving $2.85 per hr; hoisting engineers. $2.56 and common laborers, $1.85 per hr.

Bidders include:

Substructure

1 Ben C. Gerwick, Inc. & Peter Kiewit Sons Co., San Francisco, Calif.	$14,224,580
2 Raymond-Pomeroy, San Francisco, Calif.	15,389,115
3 Pacific Bridge & General Construction Co., San Francisco, Calif.	16,429,420

Bids: 12-19-52 Items	Unit	Quantity	Unit Prices 1	2
Struct exc (bell pier)	cy	210,000	$3.00	$0.60
Struct exc (cofferdam pier)	cy	2,100	5.00	3.85
Struct exc (dry land pier)	cy	1,600	4.00	8.00
Blanket fill in place	cy	30,000	4.00	5.00
Furnishing steel piling	lf	557,000	7.50	5.10
Drive stl piles in place	ea	5,063	470.00	448.00
Stl pile splices in place	ea	5,100	20.00	30.00
Cl B PC conc below elev +5' (bell pier)	cy	89,300	58.00	97.00
Cl B PC conc (cofferdam seal)	cy	710	60.00	150.00
Cl C PC conc (footing block)	cy	1,280	58.00	35.00
Cl C PC conc (structure)	cy	18,600	60.00	48.00
Bar reinf stl	lb	7,000,000	0.08	0.08
Str stl (anchor details)	lb	476,000	0.35	0.45
Furn tr Douglas fir piling (fender)	lf	174,000	1.70	3.00
Drive tr Douglas fir piles (fender)	ea	1,448	50.00	75.00
Tr Douglas fir timber (pier fender)	mfbm	900	440.00	590.00
Met wrk (timber pier fender)	lb	165,000	0.30	0.56
Engineer's Office	ls	1	16,000	35,906

Superstructure

1 Judson Pacific-Murphy Corp., Peter Kiewit Sons Co., A. Soda & Son, Emeryville, California	$21,099,319
2 American Bridge Div., U. S. Steel Corp., Pittsburgh, Pennsylvania	28,052,900
3 Bethlehem Pacific Coast Steel Corp., San Francisco, California	$61,073,815

100-foot girder spans

Items	Unit	Quantity	1	2
Str silicon stl in spans	lb	2,650,000	0.2022	0.238
Str carbon stl in spans	lb	2,340,000	0.2483	0.2047
Ltwt conc in place (pvmnt)	cy	4,200	113.41	82.00
Reinf steel in place	lb	910,000	0.0850	0.1425

Cantilever Truss Spans

Items	Unit	Quantity	Unit Prices 1 C	2
Heat tr eyebars in spans	lb	2,990,000	0.3716	0.457
Struct manganese-vanadium steel in spans	lb	3,370,000	0.2733	0.419
Str silicon stl in spans	lb	13,780,000	0.2717	0.368
Str carbon stl in spans	lb	10,080,000	0.2331	0.323
Str silicon stl in bents	lb	2,680,000	0.2637	0.356
Str carbon stl in bents	lb	1,680,000	0.2508	0.322
Ltwt conc in place (pvmnt)	cy	2,900	155.81	95.00
Bar reinf stl in place	lb	550,000	0.1306	0.1425

289-foot truss spans

Str silicon stl in place in spans	lb	19,100,000	0.2411	0.333
Str carbon stl in place in spans	lb	16,980,000	0.2344	0.295
Str silicon stl in place in bents	lb	2,010,000	0.268	0.371
Str carbon stl in place in bents	lb	4,210,000	0.2571	0.34
Ltwt conc in place (pvmnt)	cy	7,100	116.92	95.00
Bar reinf stl in place	lb	1,350,000	0.1306	0.1425

Cantilever truss spans, 289-foot truss spans, 100-foot girder spans

Heat tr eyebars in spans	lb	2,990,000	0.349	0.426
Str manganese-vanadium stl in place in spans	lb	3,370,000	0.2565	0.388
Str silicon stl in place in spans	lb	35,530,000	0.2391	0.33
Str carbon stl in spans	lb	29,400,000	0.2173	0.2935
Str silicon stl in place in bents	lb	4,690,000	0.2468	0.344
Str carbon stl in place in bents	lb	5,890,000	0.2356	0.3245
Ltwt conc in place (pvmnt)	cy	14,200	102.72	84.00
Bar reinf stl in place	lb	2,810,000	0.1081	0.1425

Breakwater, Canada

Construction of a breakwater at a storm exposed site in St. Edward, New Brunswick, Canada drew five bids to the Department of Public Works of Canada, Robert Blais, chief engineer. The $280,917 contract was awarded to J. W. & J. Anderson, Burnt Church, New Brunswick.

The twelve-months job includes construction of a roadway and a creosoted timber cribwork breakwater, having a total length of 935 ft, consisting of an approach section which is 20 ft wide for a length of 270 ft and 25 ft wide for 304 ft; an ell section 321 ft long by 25 ft wide and a pierhead 40 ft long by 65 ft wide. The approach section includes two spans each 15-ft long.

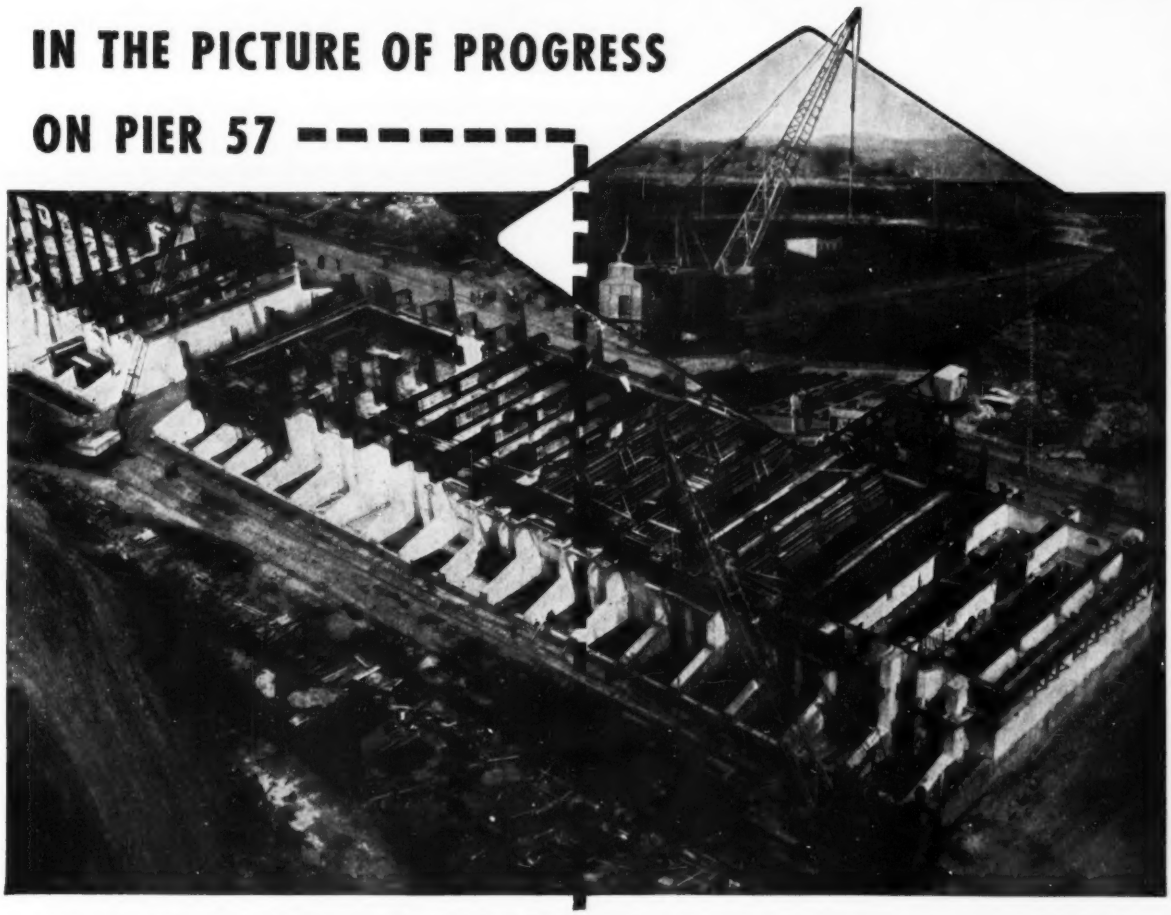
Wage rates for an 8-hr day, 44-hr week are: drivers, $1.20 per hr; compressor operators, $0.85 per hr; and laborers, $0.75 per hr.

Bidders include:

1C J. W. & J. Anderson, Ltd., Burnt Church, New Brunswick, Canada	$280,917
2 Diamond Constr. Co., Ltd., Fredericton, New Brunswick, Canada	292,318
5 North Shore Constr. Co., Montreal, Canada	387,380

Bids: 11-5-52 Items	Unit	Quantity	Unit Prices 1 C	2
Creo tmbr cribwork, below half tide level, & fully ballasted	cf	220,000	$0.73	$0.73
Creo cribwork, above half tide level & fully ballasted	cf	117,000	0.62	0.69
Creo sq sawn timber	mfbm	122	250.00	250.00
Creo covering	mfbm	71	225.00	240.00
Roadway	ls	1	800.00	13,000
Mooring posts	ea	4	25.00	25.00
Ringing bolts	ea	14	15.00	12.00
Ladders	ea	6	32.00	30.00

IN THE PICTURE OF PROGRESS ON PIER 57



CLYDE WHIRLEYS *help to maintain schedule*

New York's "Superpier", the famous and fabulous Pier 57, will be a long and lasting tribute to the skill and ingenuity of the engineers and contractors that planned and built it. Its novel means of construction presented many unusual problems that required new and unheard of applications of both methods and equipment. Great credit is due Merritt-Chapman and Scott Corp. and Corbetta Const. Co., Inc., in the handling of this job.

The Clyde Whirley that handled steel and concrete on the construction of the pier sections, is also a tribute to the skill and know-how of Clyde craftsmen. Every feature, every component of a Clyde Whirley is engineered to minimize operating costs; step up production schedules and to give safe and dependable service.

Consider the advantages of Clyde's design . . . equalized wheel carriages that permit positive determination of wheel loadings . . . counter-balanced rotating structure to assure safer stability . . . hoists specially designed for Whirley service to allow accurate load control with almost unbelievable ease of operation. Many other features contribute to the superiority of Clyde Whirleys and to their ability to give economical and dependable performance on so many different types of jobs.

They're all illustrated and described in Bulletin M-12. Write for your copy today.

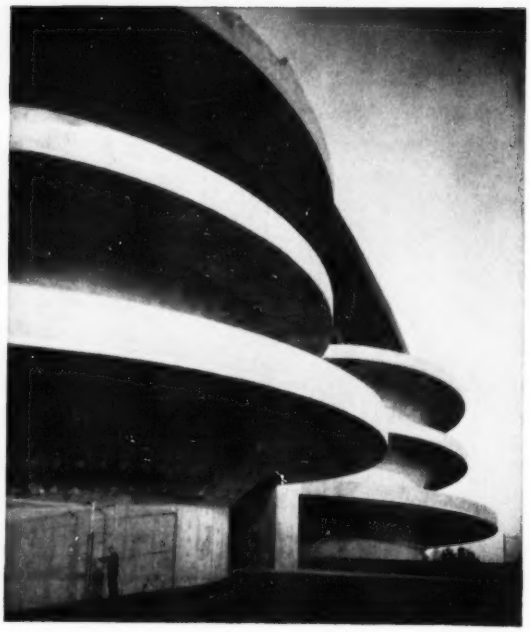
CLYDE IRON WORKS, INC. CLYDE **DULUTH, MINNESOTA**

SUBSIDIARY OF BARIUM STEEL CORP.

HOISTS · DERRICKS · WHIRLEYS · BUILDERS TOWERS
CAR PULLERS · HANDI CRANES · ROLLERS

You see here two structures, designed for opposite extremes of traffic movement. The twin stadium ramps, at the right, work upward in tight spirals, at the creeping pace of crowds on foot. The freeway over-pass, below, sweeps by in the trajectory of the high speed vehicles it carries. Each is perfectly adapted to its rate of flow, and both, inevitably, are built of concrete.

Voltaire would agree that, if there were no concrete, it would be necessary to invent it. Concrete is available in abundance, relatively low in cost, strong, fire-proof and enduring. Beyond these practical virtues it has *plasticity*. To serve architects and engineers it asks only that it be well designed, correctly proportioned *and properly processed in truck mixers of certified design, capacity, mixing speed, mixing action and accuracy of water control.*



Curves — for 1 to 100 miles an hour

Photo Above: On the 15,000 seat addition to University of Washington Stadium, cantilevered spiral ramps, with elevator shaft between, meet the problem of unidirectional traffic due to lakefront location. George W. Stoddard & Associates, Architects.

Left: On Los Angeles Freeway System

Look for this Badge of Dependability on Truck Mixers:

4½ CUBIC YARD MIXER
GUARANTEED TO HOLD MIX AND AGITATE ITS RATED CAPACITIES AND CERTIFIED TO COMPLY WITH TRUCK MIXER MANUFACTURERS BUREAU STANDARDS
AS APPROVED BY TMMBA
6 CUBIC YARD AGITATOR

You have a right to insist on this Rating Plate on any truck mixer that serves your jobs. It is available to all who comply with the quality standards which have been established by the Truck Mixer Manufacturers Bureau and approved by the National Ready Mixed Concrete Association.

These member manufacturers comply with Bureau standards:

Blaw-Knox Division
Pittsburgh, Pa.

Chain Belt Company
Milwaukee, Wis.

Concete Transport Mixer Co.
St. Louis, Mo.

Construction Machinery Co.
Waterloo, Iowa

The Jaeger Machine Co.
Columbus, Ohio

The T. L. Smith Co.
Milwaukee, Wis.

Worthington Corporation
Plainfield, N. J.

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

STREETS AND ROADS

January 20 Massachusetts

† **Mass, Falmouth**—AIRCRAFT FUELING SYSTEMS—B.A. On Or About 2/13—U. S. Eng., 857 Commonwealth Ave., Boston, Zone 15, aircraft fueling sys. at Otis Air Force Base, vicinity of Readiness Parking Apron, Eng. 19-016-53-59. Under $500,000. CD 7/10.

BUILDINGS

LOW BIDS AND CONTRACTS

Frankini Constr. Co., Inc., 26 Mystic Ave., Medford, Mass. CA. $723,381. est. $600,000. 60 HOUSING units, Proj. 200-1A, East Weymouth, WEYMOUTH, MASS. Weymouth Housing Auth., 77 Memorial Dr., Weymouth, Mass. CD 12/9, under LB.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

January 29 New York

STREETS AND ROADS

January 27 New Jersey January 29 New York

▲ **N. J., Woodbridge**—B.A. 1/20—Woodbridge Twp., Municipal Bldg., intercepting sewers, pumping stations and sewage treatment plant. $4,000,000. CD 4/16/46.

BIDS ASKED—BUILDINGS

N. Y., New York—HOUSING—B.A. 2/10—New York City Housing Auth., 63 Park Row, Zone 38, foundations and general constr.; heating and ventilating; electric; plumbing, install elevators for Carver Houses (Proj. No. NYS-56), Sect. I, incl. Bldgs. Nos. 1 to 6 (inclusive) in area bounded generally by E. 102 St., Park Ave., E. 99 St. and Madison Ave., Manhattan Boro. Plans deposit $75, $25 for elevators. CD 8/23/50.

SOON LETS CONTRACT—BUILDINGS

Pa., West Mifflin—WAREHOUSE, etc.—Ceco Steel Products Co., 5701 W. 26 St., Cicero, Ill., soon lets contract warehouse and office, $800,000. CD 2/14/52.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW YORK**—Dpt. P. Wks., The Governor Alfred E. Smith State Office Bldg., Albany,

The Savin Constr. Corp., 10 Village St., East Hartford, Conn., CA. $3,365,123, est. $4,042,000, 5 mi. Thy. 4.1 acc. mi. New York State Thruway, Mohawk Sect. Sub. 3 and 4 (Cana•ota-Vernon Sta.); city of Oneida; North South Artery: Oneida-South Bay Pt. 1, SH 1110 Oneida-Verona, SH 5558: Verona-Rome SH 5521 M. T. 52-14, MTC 52-15, STC 52-27, RC 52-108, Madison and Oneida Counties: CA $4,641,566. est. $5,270,000 6.06 mi. Thruway, 2.2 acc. mi. New York State Thruway-Catskill sect.-Sub. 6 (Greene Co. L-Rte. 9W); Coxsackie-Ravena Pt. 1, S.H. 5198; New Baltimore Station-Coeymans, S.H. 1348; 5 access roads to S.H. 1348 and SH 5198, C.T. 52-7. S.T. 52-25, R.C. 52-105, Greene Co.;

Del Balso Constr. Corp., 500 Zerega Ave., New York 61, N. Y., CA $4,309,142. est. $4,726,000, 2.89 mi. Bronx River Parkway (lower Sect. Pt. 1 and 2) Cross County Parkway, FABRP 52-1, FACCP-52-1, Westchester and Bronx Counties;

Arute Bros. Inc., 560 S. Main St., New Britain, Conn., CA $5,446,552, est. $6,433,000, 11.05 mi. and 2.68 mi. access roads, New York State Thruway, Mohawk Sect. Sub. 6 and 7 (Lowell-Whitesboro) Various County and Town Roads, Kirland-Rome, SH 8246, M. T. 52-12, S.T. 52-26, R.G. 52-106, Oneida Co.;

DePew Paving Co. Inc., & McLain Constr. Corp., 4955 Broadway, Depew, N. Y., CA. $2,346,248, est. $2,697,000, 1.11 mi. thruway and 4.64 mi. access mi. New York State Thruway, Ontario Sect. Sub 12 (Cleveland Dr.-Union Rd.); Interchange to Main St. Connection; Wherle Dr. Forest Rd.; Cnion Rd., S.H. 9215, O.T. 52-15, S.T. 52-24, R.C. 52-104, Erie Co. Grand total $20,099,631. Bids Oct. 30. CD 11/3, under LB.

▲ **Woodcrest Constr. Co., Inc.**, 369 Lexington Ave., New York, N. Y. LB $1,279,900, constr. connection between New Jersey approach to George Washington Bridge and Palisades Interstate Parkway, Stage II. Contr. GWB-140.003, NEW YORK, N. Y. Port of New York Auth., 111 8th Ave., New York 11, N. Y. Bids Dec. 23. CD 12/10.

▲† **Daniel J. Cronin, Inc.**, 717 S. Orange Ave., Newark, N. J., CA, $1,644,000, exten. altitude exhauster wing at Naval Air Turbine Test Station, West Trenton, TRENTON, N. J. Officer in Charge of Constr., Dist. P. WKs. Office, Navy Yard, Phila., Pa. Bids Nov. 6 CD 11/25, under LB.

† **The Ferber Co.**, 16 Jchnson Ave., Hackensack, N. J. LB, $463,219, 4 headquarters bldgs., McGuire Air Force Base, No. 36-109-5-3165, WRIGHTSTOWN, N. J. U. S. Eng., 121 N. Broad St., Phila., Pa. Bids Dec. 3. CD 10/22

▲ **MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,

F. P. Asher, Jr. & Sons, Inc., 1715 West Exten., Annapolis, Md. CA $1,054,135. grading, drainage, surf. 0.282 mi. dual hy. 3 level interchange structure ramp connections steel plate girder bridge over Baltimore-Annapolis R. R., Contr. AA 263-22-515, Anne Arundel Co. CD 12/16, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Heywood-Hall Constr. Co.**, 512 Swede St., Norristown, Pa., Separate Contracts. $1,700,000 164 RESIDENCES, Germantown Pike, BARREN HILL, PA.

▲ **Spring Mill Homes**, c/o Edward Kelly, Ridge Pike, Conshohocken, Pa., Separate Contracts. $1,700,000. RESIDENTIAL DEVELOPMENT, Ridge Pike, BARREN HILL, PA.

Edward J. O'Brien & John E. Murphy, 69 and Walnut Sts., Upper Darby, Pa., Separate Contracts. $600,000. RESIDENTIAL DEVELOPMENT, 5 and Cedar Sts., DARBY, PA. Erling Wenge, McClatchy Bldg., Phila., Pa., archt.

Secane Homes Co., 225 S. 69 St., Upper Darby, Pa., Separate Contracts. $600,000. RESIDENTIAL DEVELOPMENT, South and Franklin Aves., FOLSOM, PA.

Frank T. Harrison, Jr., 323 Lombardy Rd., Drexel Hill, Pa., Separate Contracts. $475,000. RESIDENTIAL DEVELOPMENT, Mitchell Ave., FOLSOM, PA. David Slott, 7060 Garrett Rd., Upper Darby, Pa., archt.

Shadeland Homes, Inc., Lansdowne, Pa., Separate Contracts. $799,000. RESIDENTIAL DEVELOPMENT, Shadeland Ave., LANSDOWNE, PA. David Slott, 7060 Garrett Rd., Upper Darby, Pa., archt.

▲ **Connelly & Wyatt**, 1 S. 69 St., Upper Darby, Pa., Separate Contracts. $1,000,000. RESIDENTIAL DEVELOPMENT, Highland Ave., RIDLEY PARK, PA. Karl F. Otto, Rosemont, Pa., archt.

Stanley Kempen, 69 and Walnut Sts., Upper Darby, Pa., Separate Contracts. $500,000. RESIDENTIAL DEVELOPMENT, Hinckley Ave., RIDLEY PARK, PA.

George W. Nicholson, Devon, Pa., CA. $500,000. men's DORMITORY, ST. DAVIDS, PA. Eastern Baptist College, Fairview Rd., St. Davids, Pa.

James-Lewis Corp., 252 Long Lane, Upper Darby, Pa., Separate Contracts. $780,000. RESIDENTIAL DEVELOPMENT, Saxer Ave., SPRINGFIELD, PA. David Slott, 7060 Garrett Rd., Upper Darby, Pa., archt.

† **Merando, Inc.**, 813 Fourth St. N. E., Wash., D. C. CA $636,724. ADMINISTRATION and OPERATIONS BLDG. 1 and BLDG. 31 addn., addnl. facilities, Naval Radio Receiving Station, NOY 70519, CHELTENHAM, MD. Dist. P. Wks. Office, Potomac River Naval Command, Naval Gun Factory, Wash., D. C. Bids Dec. 17, awarded Dec. 29. CD 12/23, under LB.

▲ **Pinewood Constr. Co., Inc.**, 1800 N. Charles St., Baltimore 1, Md. CA Est. $2,176,000. two hundred and seventy-two 2 story 17x32x24 ft., brick, masonry row type HOMES, 2100 blocks Westfield, Louise and Cloville Aves., 6200 blocks Pilgrim Rd. and Pioneer Dr., BALTIMORE, MD. Grimdon Realty, Inc., 1800 N. Charles St., Baltimore 1, Md. Hal. A. Miller, 2118 Maryland Ave., Baltimore 18, Md., archt.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

February 20 Alabama

STREETS AND ROADS

February 20 Alabama

▲ **Fla., Key West**—B.A. 2/2—City, City Hall, sanitary sewer imprvs. $2,121,000. Plans deposit $100. Clifford-Cooper & Assocs., 101 Westward Ave., Miami Springs, engrs. CD 11/11.

BIDS ASKED—BUILDINGS

▲ **Va., Norfolk**—SCHOOLS—B.A. 1/23—Norfolk Co. School Bd., 148 Granby St., Southwestern Branch Elementary School, near Portsmouth, $500,000; Ingleside Elementary School, at Ingleside, $500,000. Plans deposit $50. Extended date. Bernard B. Spigel, Dickson Bldg., archt.

La., Baton Rouge—CHURCH—B.A. 2/12—First Baptist Church, c/o A. Hays Towns, archt., Triad Bldg., church. $500,000. Plans deposit $50. CD 12/2.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Kenny Constr. Co.**, 3220 Oakton St., Skokie, Ill., CA $2,055,000, interceptor sewers, etc., CHATTANOOGA, TENN. City, City Hall, Chattanooga, Tenn. Bids Dec. 16. CD 12/29, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Claussen & Webster, 1394 Gwinnett St., Augusta, Ga., CA. $785,175, HIGH SCHOOL, AIKEN, S. C. Aiken Co., Aiken, S. C. CD 9/10.

Daniel Constr. Co., 429 Main St., Greenville, S. C. CA $445,000. CERAMICS ENGINEERING BLDG., CLEMSON, S. C. Clemson College, Clemson, S. C. Bids Dec. 22. CD 12/15.

Smith & Jones, 936 W. Peachtree St., Atlanta, Ga., LB $410,000. HOUSING Projects SC 8-31, 8-32, 8-47, 8-48, SENECA and FOUNTAIN CITY, S. C. South Carolina Regional Housing Auth. No. 1, Laurens, S. C. Bids Jan. 5. CD 12/19.

▲ **J. Hilbert Sapp**, Box 2053, Orlando, Fla., Owner Builds, $1,200,000, 150 RESIDENCES, LAKELAND, FLA.

Harry G. Crowe, Stallings Bldg., Birmingham, Ala., Owner Builds, $400,000. 50 RESIDENCES, BIRMINGHAM, ALA.

A. C. Samford, Inc., Albany, Ga. CA $495,000. 70 HOUSING units, OPELIKA, ALA. Opelika Housing Auth., Opelika, Ala. Bids Jan. 6. CD 12/12.

Allan Amundsen, 701 Orion Ave., New Orleans, La. Owner Builds. Est. $500,000. 40 RESIDENCES, HARAHAN, LA.

Canfield, Badgett & Scarbrough Co, 1850 Union Ave., Memphis, Tenn., CA $623,000, GYMNASIUM, MEMPHIS, TENN. Southwestern at Memphis, 2000 N. Parkway, Memphis, Tenn. Bids Nov. 13. CD 12/12, under LB.

T. E. Akers & Co. 1213 Division St., Nashville, Tenn., CA. $975,376, 100 HOUSING units, NASHVILLE, TENN. Nashville Housing Auth., 701 N. 6 St., Nashville, Tenn. Bids Dec. 16. CD 12/23, under LB.

Helrich Constr. Corp., 2100 Ailor Ave., Knoxville, Tenn., LB $916,000, 108 HOUSING units, TULLAHOMA, TENN. Tullahoma Housing Auth., Tullahoma, Tenn. Bids Jan. 6. CD 12/23.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

January 31 Michigan

O., Cleveland—B. A. 2/2—Cuyahoga Co., Court House, Zone 14, 52 ft. concrete paving of Ridge Rd. between Brookpark and Memphis Rds. (8,590 ft.) incl. removing old paving, grading sewer alterations, etc. $700,000. Plans deposit $15. Albert S. Porter, Standard Bldg., Zone 13, engr. CD 11/13/51.

Ind., Valparaiso—B. A. 2/20—City, City Hall, sewage disposal works and interceptor sewers, $725,000 O. M. Leonard & Assocs., 1000 Washington St., Michigan City, engrs. CD 12/2.

BIDS ASKED—BUILDINGS

▲ **Mich., Warren**—SCHOOL—B.A. 1/23—Warren Twp. Albert Lipke, secy. School Dist. No. 2, 2 story, bsmnt., brick, steel, concrete high school. $1,000,000. Plans deposit $60. Brender & Van Reyendam, 410 Hammond Bldg., Detroit, archts. CD 1/5.

Ind., Goshen—HOSPITAL—B.A. 2/1—City, City Hall, 2 story, bsmnt., concrete city hospital Hyde Park Blvd. and Main St., $800,000 Extended date. Bevington Taggert & Fowler, 119 E. Ohio St., Indianapolis, engrs. Paul R. Jernegan, Goshen, archt. CD 11/20/51.

▲ **O., Cleveland** HOUSING—B.A. 2/10—Cleveland Metropolitan Housing Auth., 1325 W. 28 St., Zone 13, 408—unit public housing (Cedar Apartments Extension) between Central and Scovill Aves. near E. 30 St. $4,000,000. Plans deposit $100. Project Architects & Engineers, 716 The Arcade, Zone 14, archts. CD 6/2.

▲ **Mich., Caro**—MEAT SHOP—STORES, etc.—B. A. 2/18—State, A. N. Langius, dir. State Bldg. Dpt., Lansing, general, mechanical, electrica', refrigeration corkwork, mechanical refrigeration, shelving contracts for meat shop-stores, bakery addn., paint shop, fire truck stall, $1,000,000. Plans deposit $25. Giffels & Vallet, Inc., 1000 Marquette Bldg., Detroit, archt.

▲ **Mich., Detroit**—INSTITUTE—B.A. 2/18—State, A. N. Langius, dir. State Bldg. Dpt., Lansing, 4 story with two 1 story wings, brick, steel, concrete neuro-psychiatric institute, Hastings, Rivard, Lafayette and Macomb Sts. $3,300,000. CD 11/6.

Ill., Bellwood—FACTORY—Bids Asked—Wire Cloth Products Co., 332 S. Michigan Ave., Chicago, 1 and 2 story, 56,000 sq. ft. factory. $500,000. Engineering Systems, Inc., 221 N. La Salle St., Chicago, engr.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **INDIANA**—State Hy. Comn., State House Annex, Indianapolis,

Calumet Paving Co., Zionsville, Ind., CA, $599,832, est. $631,851, dual 40 ft. and 20 ft. wide, c. conc., and plan c. conc. paving 0.904 mi. State Rds. 50 and 350 in Aurora, Dearborn Co. Bids Dec. 30, awarded Dec. 29. CD 12/17;

Berns Constr. Co., 312 E. Washington St., Indianapolis 4, Ind., CA, $953,718, est. $1,053,342, c. conc. paving 5.826 mi. State Rd. 41 north of U. S. Rd. 24 at Kentland to north of State Rd. 16, Newton Co. Bids Dec. 9, awarded Dec. 29. CD 12/15, under LB.

Herlighy-Midcontinent Co., 135 S. La Salle St., Chicago, 3, Ill., LB. $735,175, roadway structures at Halsted St. Interchange, CHICAGO, ILL. City, City Hall, Chicago, Ill. CD 7/11/49.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Indiana-Kentucky Electric Co.**, 30 Church St., New York 8, N. Y., Separate Contracts. Total cost $280,000,000. 1,200,000 kw. Clifty Creek Electric PLANT,

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MADISON, IND. American Gas & Electric Service Corp., 30 Church St., New York 8, N. Y. engrs. CD 11/12.

J. L. Simmons, Inc., 185 N. Wabash St., Chicago 1, Ill., CA, Approx. **$994,000,** HOUSING, incl. 54 apartments, incl. 120 units, KANKAKEE, ILL. Kankakee Housing Auth., Kankakee, Ill. CD 1/6, under LB.

† **Sumners Sollitt Co.,** 307 N. Michigan Ave., Chicago, 1, Ill., LB, **$979,282,** HEATING PLANT, railroad track work at Argonne National Laboratory, LEMONT, ILL. Atomic Energy Comn., Lemont, Ill. Bids Dec. 23. CD 11/25.

▲ **Christman Co.,** 408 Kalamazoo Bldg., Lansing, Mich. CA. **$6,270,053.** Men's LIVING CENTER, incl. 3 DORMITORIES, FOOD SERVICE BLDG., Michigan State College, EAST LANSING, MICH. State, A. N. Langius, Dir. State Bldg. Dpt., Lansing, Mich. CD 1/6, under LB.

City, Bd. Educ., 143 Bostwick Ave., Grand Rapids, Mich., rejected bids Dec. 16, 2 story, brick, steel Spencer Elementary School, GRAND RAPIDS, MICH. LB. **$597,500.** CD 12/29, under LB.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
January 23 Kansas
STREETS AND ROADS
January 23 Minnesota

BIDS ASKED—BUILDINGS

Tex., San Antonio—HIGH SCHOOL—B.A. 2/3—San Antonio Independent School Dist., Lavaca and Matagords Sts., Rhodes Junior High School, Barclay and Tampico Sts. $625,000. Plans deposit $50. Atlee B. & Robert M. Ayres, Transit Tower, and Bartlett Cocke, 3501 Broadway, archts. CD 8/18.

▲ **Okla., Covington**—PLANT—Bids Asked—Sterling Oil of Oklahoma, Inc., Howard Bldg., Tulsa, gasoline extraction plant, near here. $2,500,000. CD 12/19.

▲ **Tex., Port Arthur**—GASOLINE PLANT—Bids Asked—Gulf Oil Corp., Gulf Bldg., Pittsburgh, Pa., high octane aviation gasoline mfg. unit. $12,000,000. CD 12/16.

SOON LETS CONTRACT—HEAVY CONSTRUCTION

Texas—TELEPHONE LINES—Mid-Plains Telephone Cooperative, Tulia, soon lets contract constr. approx. 1,100 mi. rural pole telephone lines and some small brick, masonry allied bldgs., Tulia, Swisher Co. $750,000. Hasie & Green Engr. Co., Box 1139, Lubbock, engr. CD 3/13.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Olson Constr. Co.,** 410 S. 7 St., Lincoln, Neb., CA **$3,062,198,** 2 maintenance hangars, Lincoln Air Force Base, Inv. 25-066-53-89, LINCOLN, NEB. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Dec. 22. CD 12/30, under LB.

▲ **Vaughn & Taylor Constr. Co., Inc.,** Wichita Falls, Tex., CA. **$1,660,000.** 43 mi. 16 in. welded joint crude oil pipe line from near Arden to near Eldorado, TEXAS, **Pan-American Pipe Line Co., M. Esperson Bldg., Houston, Tex. CD 11/30/51.**

† **U. S. Eng.,** P.O. Box 1229, Galveston, Tex., cancelled bids to have been opened Jan. 29, 4 training squadron headquarters and operations bldgs., and 1 training bldg., 1 training aids bldg., total approx. 69,000 sq. ft. floor space, Inv. No. Eng. 41-243-53-70. ELLINGTON AIR FORCE BASE, TEX. **$400,000.** Will readvertise. CD 11/26.

Linbeck Constr. Co., Box 13007, Houston, Tex., CA $716,878, incinerator, HOUSTON, TEX. City, City Hall, 900 Brazos St., Houston, Tex. Bids Dec. 24. CD 12/17.

Wade Lahar Constr. Co., Mountain Home, Ark., CA. **$684,250,** est. $819,380, clearing portion of Lake Houston Reservoir Site, San Jacinto River Water Supply Proj., 5,750 acres, HOUSTON, TEX. City, City Hall, 900 Brazos St., Houston, Tex. Bids Dec. 24, awarded Jan. 3. CD 12/16.

F. D. Shuffebarger, 200 E. Central Ave., Albuquerque, N. M., CA. **$808,700.** sanitary sewerage sys. imprvs., extens., ALBUQUERQUE, N. M. City, City Hall, Albuquerque, N. M. Bids Dec. 16. CD 10/8/51.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Wisconsin-Minnesota Contractors, Inc.,** (W.M.C., Inc.) Winona, Minn. CA **$1,384,000.** public HOUSING, WINONA, MINN. Winona Housing & Redevelopment Auth., E. G. Schernecker, exec. dir., Winona, Minn. Bids Nov. 25, awarded Dec. 16. CD 12/9, under LB.

Stokes Adair Co., 2518 Tangley St., Houston, Tex., CA Approx. **$500,000.** Aluminum PLANT, HOUSTON, TEX. Doyle M. May, 3219 University Blvd., Houston, Tex. CD 1/6.

Johnson Constr. Co., 1329 S. Clay St., Springfield, Mo. LB, **$412,850.** rein-con., brick tuberculosis SANATORIUM, MOUNT VERNON, MO. State, Dpt. P. Health & Welfare, c/o Office of Director Pub. Bldgs. 100 Capitol St., Jefferson, Mo. Johnson & Robinett, 400 E. McDaniel St., Springfield, Mo., archts. Bids Dec. 22.

▲ **The Austin Contg. Co.,** 1000 Singleton Blvd., Dallas, Tex., CA. Approx. **$4,250,000,** ethyleen-glycol chemical PLANT; $37,775, water supply and lines; **$65,000,** road and area parking zone constr. and hard-type paving; **$48,500,** dirt and earthwork for site and area of chemical plant. ORANGE, TEX. Grand total $4,401,275. Allied Chemical & Dye Corp., Orange, Tex. J. E. Hollis 24, c/o owner, engr. CD 11/19.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

† **Ariz., Tucson**—SQUADRON H.G., etc.—B.A. 1/30—U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Squadron H. Q. and Warehouse Bldg., Davis Montahan Air Force Base, $500,000. CD 12/5.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

NEVADA—Dpt. Hys., State Office Bldg., Carson City,
Isbell Constr. Co., S. Virginia Rd., Reno, Nev., LB **$771,198,** const. 2.459 mi. Rte. Sec. 001-1, Cont. Sec. WA-01, from California-Nevada State line to 1 mi. southwest of Verdi, Cont. No. 861, Proj. No. FI-001-1 (2), Washoe Co. Bids Dec. 30. CD 12/18.

† **NEVADA**—Bureau P. Rds., Dpt. Commerce, Carson City,
Gibbons & Reed Co., 259 W. 3rd South St., Salt Lake City, Utah, CA. **$490,392,** 4.15 mi. road const. Proj. Nev. FH 14-A1, Grand Central, Nevada National Forest, White Pine Co. Bids Dec. 30. CD 12/17.

▲ **CALIFORNIA**—State Div. Hys., 120 S. Spring St., Los Angeles,
B. J. Ukropina, T. P. Polich, Steve Kral & John R. Ukropina, Box 105, San Gabriel, Calif. CA **$2,476,702.** 2.1 mi. road constr., 5 bridges, etc. on Santa Ana Freeway between Pioneer Blvd. and Rosecrans Ave., Los Angeles Co. Bids Dec. 18 awarded Dec. 31. CD 12/30, under LB.

▲ **MacDonald & Kruse,** 7540 Wheatland Ave., Sun Valley, Calif., LB, **$1,577,577,** constr. rein.-con. conduit in Aliso Creek from Wilburn Ave. to Los Angeles River, LOS ANGELES, CALIF. Los Angeles Co., Flood Control District, 2250 Alcazar St., Los Angeles, Calif. Bids Dec. 30. CD 12/12.

† **N. P. Van Valkenburg Co.,** 8609 San Vicente St., South Gate, Calif., CA, **$754,620,** water supply sys. Marine Corp Training Center, NOY 74110, Spec. 35145, TWENTYNINE PALMS, CALIF. Dpt. Navy, San Diego, Calif. Bids Dec. 18. CD 12/23, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

Farmer & Godfrey Constr. Co., 2801 N. 32 St., Phoenix, Ariz., CA, **$547,844,** Elementary SCHOOL, auditorium, cafeteria, PHOENIX, ARIZ. Maricopa Co., Court House, Phoenix, Ariz. Awarded Dec. 15.

▲ **Bethlehem-Pacific Coast Steel Co.,** 3631 E. Marginal Way, Seattle, Wash. CA **$2,000,000.** structural steel for paper MILL, EVERETT, WASH. Scott Paper Co., Everett, Wash. CD 11/9/51.

▲† **Blaw-Knox Co.,** Chemical Plants Div., 321 Pennsylvania Ave., Pittsburgh, Pa., CA, Approx. **$40,000,000.** chemical processing PLANT, RICHLAND, WASH. Atomic Energy Comn., Pentagon, Wash., D. C. General Electric Co., River Rd., Schenectady, N. Y., engr. Vitro Corp. of America, 233 Broadway, New York, N. Y., archts. CD 12/31.

Brunzell Constr. Co., 3945 Higuera St., Culver City, Calif., LB, **$629,979,** 33,800 sq. ft. Henderson SCHOOL, BARSTOW, CALIF. Barstow Union School Dist., 405 N. 2 St., Barstow, Calif. Bids Dec. 29. CD 12/18.

▲ **C. F. Braun & Co.,** 1000 S. Fremont Ave., Alhambra, Calif., CA **$13,000,000,** synthetic ammonia PLANT, BREA, CALIF. Brea Chemicals, Inc., sub. Union Oil Co. of Calif., 617 W. 7 St., Los Angeles, Calif. Amoniaco Corp. will build and finance plant.

▲ **Biltmore Homes, Inc.,** 9434 Long Beach Blvd., South Gate, Calif. Owner Builds. **$1,866,800.** 242 stucco DWELLINGS, Northwood Ave., 14 St., Nestor Ave., 139 St., etc., COMPTON, CALIF.

Sonoma Valley Union High School Dist., Sonoma, Calif. rejected bids Dec. 17, SHOP BLDG. at high school, SONOMA, CALIF. LB **$464,100.** CD 12/30, under LB.

Tulare Co., Court House, Visalia, Calif. rejected bids Dec. 30, Tulare County Hospital admin. bldg., VISALIA, CALIF. LB **$418,413.** CD 12/17.

CANADA

BIDS ASKED—BUILDINGS

▲ **Ont., Toronto**—SYNAGOGUE—B.A. 2/15—Beth Tzedec Congregation, c/o B. Godfrey, chm., 49 Front St., East, steel, brick, stone concrete, synagogue, auditorium, sanctuary, administrative office Bathurst St. and Warwick Ave. $2,000,000. Hooper & Yolles, 880 Bay St., engrs. Harry B. Kohl, 29 Colborne St., Page & Steele 72 St. Clar Ave. West, and I. Markus, 96 Bloor St. W., archts.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Burns & Dutton Concrete & Constr. Co.,** 137 Ave. and 104 St., Edmonton, Alta., CA, **$500,000,** standard drill and recreation hall, theatre, lounce and store, air force base, COLD LAKE, ALTA. Defence Constr. Ltd. Kensington Bldg., Winnipeg, Man. Bids Nov. 18, awarded Dec. 29. CD 11/3.

New West Constr. Co. Ltd., 10480 113 St., Edmonton, Alta., CA, **$631,000,** strengthening and rehabilitation runway and construction associated drainage at air-

port, GRANDE PRAIRIE, ALTA. Dpt. Transport, Hunter Bldg., Ottawa, Ont. Bids Oct. 30, awarded Dec. 30.

BUILDINGS

LOW BIDS AND CONTRACTS

Dominion Constr. Ltd., 10214 114 St., Edmonton, Alta., CA, **$585,000**, 1 story, 36x280 ft., rein-con., structural steel, stone FACTORY, EDMONTON, ALTA. Great Western Garment Ltd., 10344 97 St., Edmonton, Alta. CD 6/6.

▲ **A. F. Byers Constr. Co. Ltd.**, 5674 Western Ave., Montreal, Que., CA, **$1,500,000**, 211,975 sq. ft., rein.-con., structural steel, brick, bottling PLANT, MONTREAL, QUE. Coca-Cola Ltd., 90 Broadview Ave., Toronto, Ont. Mathers & Haldenby, 15 St. Mary St., Toronto, Ont., archts. CD 5/24/44.

ALASKA

BIDS ASKED—HEAVY CONSTRUCTION

▲† **Alaska**—BARRACKS—B.A. 1/28—U. S. Eng., Evergreen Hall, 3013 Arcade Bldg., Seattle 1, Wash. two 2 story, bsmnt., 28,630 sq. ft. rein.-con. barracks, Ladd Air Force Base, ENG 95-507-53-53. $1,156,000. Plans deposit $25. CD 11/25.

† **Alaska, Shemya**—PIER—B.A. 2/17—P. Wks. Office, Headquarters, 17th Naval Dist., U. S. Naval Station, Kodiak, 40x200 ft. exten. to existing pier, Spec. 31611. $900,000. Plans deposit $10.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **United Contractors**, Fairbanks, Alaska, LB. **$1,317,900**, est. $1,237,288, one story, 200x309 ft. rein.-con., steel, masonry automotive maintenance facility bldg., ENG 95-507-53-29, Ladd Air Force Base, ALASKA. U. S. Eng., Anchorage, Alaska. Bids Dec. 30. CD 12/18.

† **S. S. Mullen, Inc.**, 621 9th Ave. N., Seattle, Wash., LB. **$631,973**, est. $609,387, 1 story, 155x200 ft., rein.-con., steel, masonry automotive maintenance facilities, ENG 95-507-53-27, Eielson Air Force Base, ALASKA. U. S. Eng., Anchorage, Alaska. Bids Dec. 29.

FOREIGN

BIDS ASKED—HEAVY CONSTRUCTION

Iraq—B.A. 4/30—Development Bd. of the Govt. of Iraq, Baghdad, 2 road bridges, the South Gate Bridge and the Adhamiyah Bridge over the River Tigris at Baghdad. Plans deposit I.D. 10,000 each.

New Scruggs Vandervoort Barney department store in fashionable Clayton, Missouri. Architect: Harris Armstrong. Consulting Engineer: Neal J. Campbell. Contractor: Gamble Construction Co.

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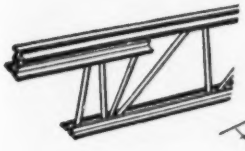

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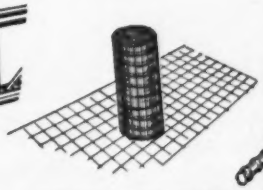

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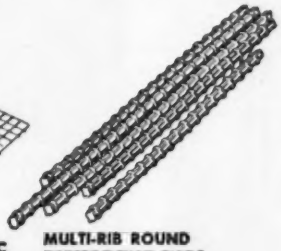

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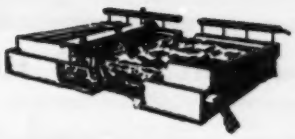

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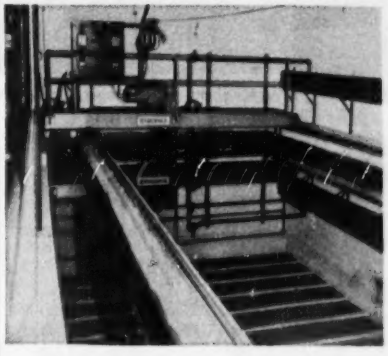

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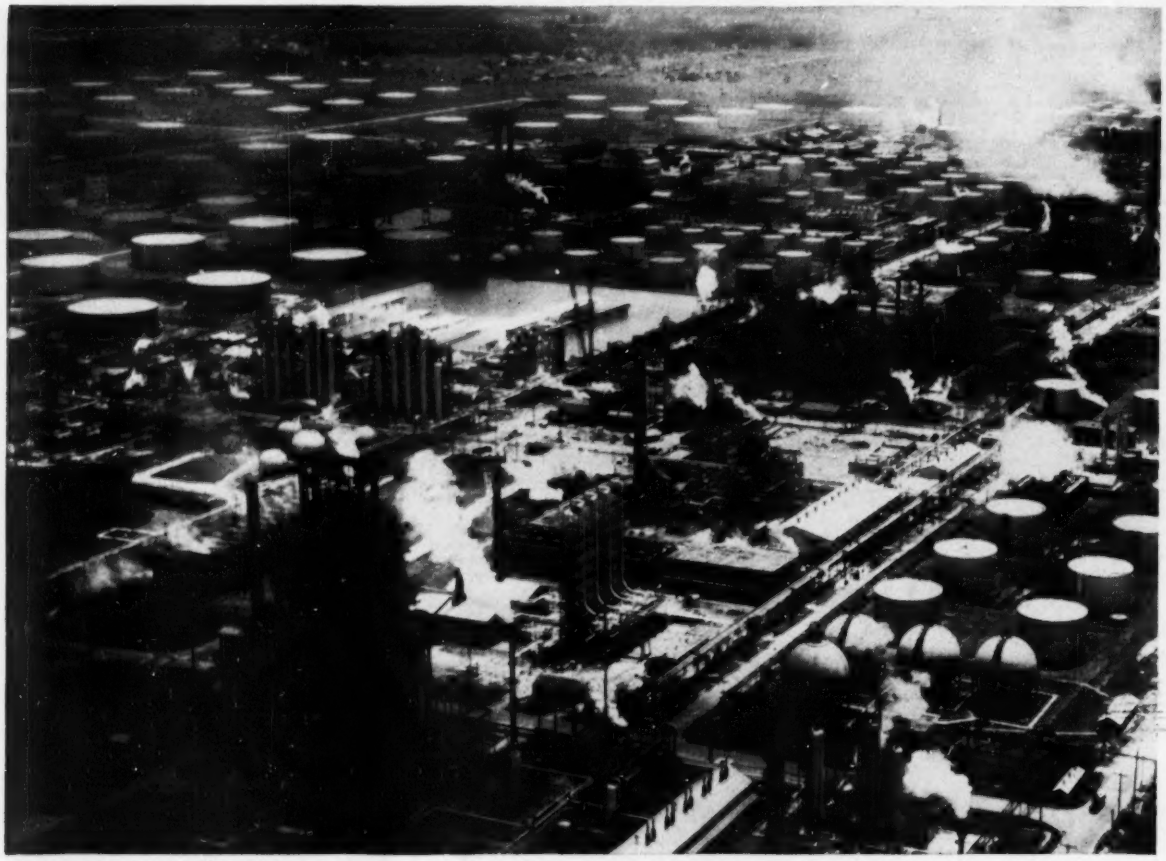
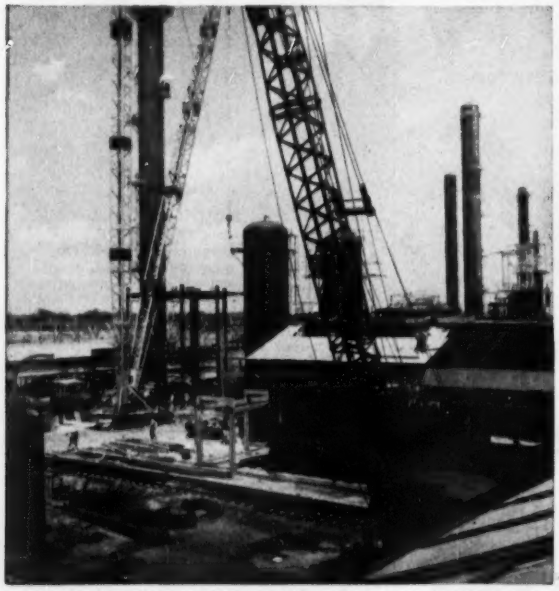
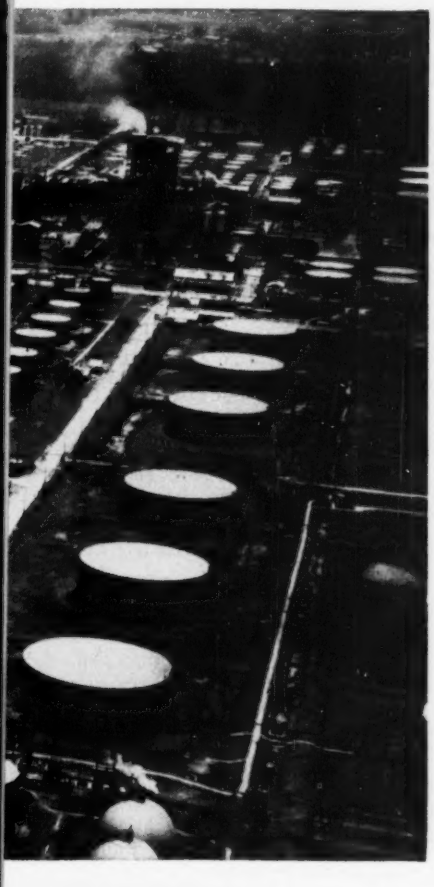


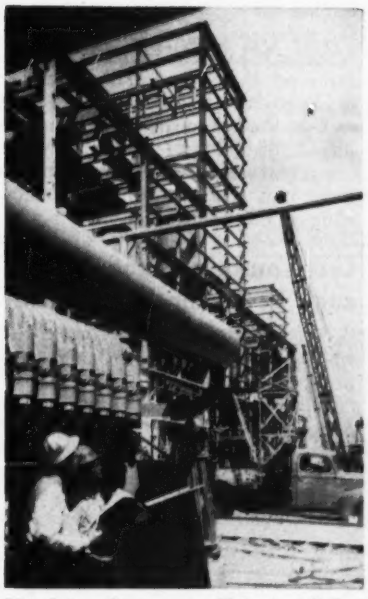
Humble Oil & Refining Co.'s plant at Baytown will add a $4.8-million unit to be used in making Dacron synthetic fiber by DuPont.



At the Shell Oil Co. refinery at Deer Park, a new unit is under way to produce benzene and toluene.

A chlorine pipeline is being installed at the anti-knock gasoline ingredients plant of Ethyl Corp. at Houston.





This brine filter press will be installed at Ethyl Corp.'s Houston plant.

Industrial building booms in Gulf Coast region

Petrochemicals and light metals key factors in widespread plant expansion programs

Oil-rich Texas and Louisiana have found a new source of wealth in petrochemicals. "Black gold," in a comparatively new form, is creating a fast-growing industrial area—with millions of dollars in new construction—in a strip 100 miles wide, along the Gulf Coast, from the Sabine River to the Rio Grande.

Latest to announce construction plans in the area is Goodrich-Gulf Chemicals, Inc. The firm, a subsidiary of B. F. Goodrich Co. and the Gulf Oil Corp., will build an $80-million petrochemicals plant at Orange, Tex.

Allied Chemical & Dye Corp. will spend $5 million for initial units of an ethylene oxide-ethylene glycol plant in the same locality.

Foster Grant & Co., of Massachusetts, plans a $4.7-million styrene plant to serve its plastics plant in the East. The Foster Grant factory will be built on the Sabine River, in Texas, only a few miles from Lake Charles, La., where Davison Chemical Co. plans a $7-million plant to supply neighboring petroleum refineries with catalysts.

Lake Charles also will be the site of the new $28.6-million plant of American Petrochemical Corp., a jointly owned subsidiary of Cities Service Refining Corp. and Firestone Tire & Rubber Co. Products will include vinyl chloride and ethyl chloride, which are plastic bases, and ethylene glycol, a base for anti-freeze.

In the spring, E. I. du Pont de Nemours will start construction of a multi-million dollar chemical plant at Beaumont. And, just last month, the Houston Oil Co. and Time, Inc., formed the East Texas Pulp & Paper Co., which will start construction in a few months on a multi-million dollar mill 15 miles north of Beaumont.

At Baytown, Consolidated Chemical Industries soon will start construction of a large sulfur recovery plant. The plant will be built on a site adjacent to the refinery of the Humble Oil Co.

A few miles south, at Texas City, ground has been broken for a $4-million fertilizer plant of the Texas City Chemical Co.

Seadrift, Tex., was chosen by Carbide & Carbon Chemicals Division of Union Carbide as the site of its $65-million plant, due to get under way soon. Southwest of Seadrift is the site of the alumina plant now under construction for Reynolds Metals Co.

• **Other sparkplugs**—Chemicals account for most of the industrial growth in the region, but petroleum refining and processing of light metals are also sparking the industrial boom.

At Rockdale, not far from Austin, Aluminum Company of America now has in partial operation a $100-million smelting plant that will be completed sometime this year. The finished installation will include a smelting plant with four potlines, in which aluminum will be produced from refined aluminum ore; a plant for the manufacture of carbon electrodes required for the electrolytic aluminum producing process; a power plant for the generation of required electricity; and facilities for mining lignite. Another new aluminum smelter was completed recently at Corpus Christi.

The $80-million San Patricio plant of the Reynolds Metals Co. will turn out 160,000,000 pounds of aluminum annually. Adjacent to the reduction plant, the company has under construction a $42-million plant to produce the alumina feed stock that will be used by this and other reduction plants of the Reynolds Metals Co.

A hundred miles up the coast, near Port Lavaca, is the third aluminum smelter plant—the $30-million Point Comfort Works of the Aluminum Company of America.

When it was completed in 1950, the Point Comfort Works had a capacity of 115,000,000 pounds of aluminum per year. An expansion program last year added three additional lines and boosted the plant's capacity to 185,000,000 pounds.

This belt, along the Gulf, is expected to become the largest aluminum-producing area in the United States within the near future.

• **More industry coming**—Industrial

building is due for another boost when fabricators come into the area in greater numbers. With three enormous plants producing 515,000,000 pounds of aluminum annually, fabricators are expected to gravitate toward the region in the next few years.

The first such fabricating plant was announced for the coastal area late in November. As a further invitation—if one is needed—aircraft plants are located in the nearby Fort Worth-Dallas area.

Other light metals are gaining importance. Magnesium is one. It is recovered from sea water at Freeport by the Dow Chemical Co., which recently completed a $35-million expansion program.

With its own facilities—and those it operates for the federal government—Dow now is producing 90,000,000 pounds of magnesium a year.

Industrial expansion in the area could come from other metals. At Texas City, for example, the government has the Longhorn tin smelter, the only such plant in the country. There is a zinc smelter in Corpus Christi, and in Houston, the Tenn-Tex Alloy & Chemical Corp. produces ferromanganese and ferrosilicon for the steel industry. Most of the alloy output—about 2,500 tons per month—will be used by the nearby Sheffield Steel Corp. plant which can produce 1,000,000 tons of steel per year.

At Daingerfield, 200 miles from Houston, the $30-million Lone Star Steel Co.'s pig iron plant helps to supply the requirements of the area. At present, the company has under construction a completely integrated steel mill that will cost $73 million.

• **Varied growth**—The industrial boom is widespread; it is not confined to one or two cities, nor is it dependent on one or two major products.

All along the coast, expansion is the keynote. In the Beaumont-Port Neches-Port Arthur area, chemical plants, synthetic rubber plants, oil refineries, and sulfur recovery facilities are expanding rapidly.

Texas City is the site of a number of large chemical plants that are being enlarged. Carbide & Carbon Chemicals Division of Union Carbide & Carbon Corp. is completing a $13.8-million unit that will produce vinyl resins, and a $9-million unit to produce oxygen and methanol. Monsanto Chemical is doubling its acrylonitrile plant.

Freeport is the site of the largest chemical plant along the Gulf Coast. There Dow Chemical Co. is producing more than 60 different chemical products. Investment in that plant has been estimated at $300 million.

Houston has been selected as the site of a large group of new chemical plants. For the most part, they extend for miles along both shores of the ship channel. Ethyl Corp. recently completed a $48-million plant there for production of anti-knock gasoline ingredients. Diamond Alkali Corp. is enlarging its insecticide plant and doubling its chlorine-caustic output.

Phillips Chemical Co. is doubling the output of its ammonium sulphate plant near Pasadena, and building an ammonia plant at a cost of $25 million, and a vinyl pyridine unit at a cost of $3.5 million.

Rohm & Haas is doubling the size of its plant. Shell Chemical Co. has completed a sulfur recovery plant, now has other units under construction. San Jacinto Chemical Co. plans to increase capacity of its ammonia plant.

A hundred miles west of Houston, du Pont's Victoria Works is expanding its production of nylon chemicals. At Corpus Christi, Columbia-Southern Chemical Co. has boosted its output of alkalis. And, 30 miles to the south, is the Bishop textile chemicals plant of the Celanese Corporation of America. A large addition is planned there, as the latest step in an almost-continuous expansion.

In city after city along the Gulf Coast, there are almost-endless variations of this theme as new markets open for Texas and Louisiana petroleum, chemical, metals, and fibre products—and a new market opens to the construction industry for industrial building.

Consolidation sought for water districts

Consolidation of California's 10 scattered water agencies into a single department—which might also take over operation of the Central Valley project works if state ambitions are realized—was called for in an annual message to the California legislature last week.

Gov. Earl Warren, coupling his request to a strong plea for continued development of all state water resources, called for an over-all state agency, headed by a director, to broaden state work and provide leadership in water development. He called attention to the state's studies of feasibility of state construction of the $1.2-billion Feather River project, and to plans for taking over the Central Valley work, as reasons for the establishment of such an agency.

At present, these authorities administer California waters, without anything in the way of formal directing or coordinating requirements: Division of Water Resources Board in the Department of Public Works; the Reclamation Board; the Water Project Authority; the Colorado River Board; the San Luis Rey Water Authority; the Water Pollution Control Board; nine regional water pollution control boards; the California Districts Securities Commission and the Bureau of Sanitary Engineering in the Department of Public Health.

The inclusion of the sanitary functions under an authority such as that suggested by Warren may prove the trouble-spot for the proposal, observers said. Supporters of pollution work immediately emphasized that these boards are doing good work, and that they might oppose the over-all agency if it includes sanitation functions.

University of Minnesota plans $10-million building program

The University of Minnesota will ask the 1953 state legislature, now in session, for $10.4 million for construction and building maintenance work for the two-year period starting next July 1, President J. L. Morrill, of the university, said last week.

He outlined 27 projects slated to share the money, and pointed out that the university's board of regents included only "high-priority" building needs in the projects.

Included in the requests are: $4 million for eight building projects on the university's main campus in Minneapolis; $3.6 million for five structures on the agricultural campus in St. Paul; $2.1 million for three projects at the university branch in Duluth; $700,000 for 11 jobs at six other university schools and experiment stations, plus general repairs and remodeling at the branch stations.

Lease-purchase contract can't be broken, county told

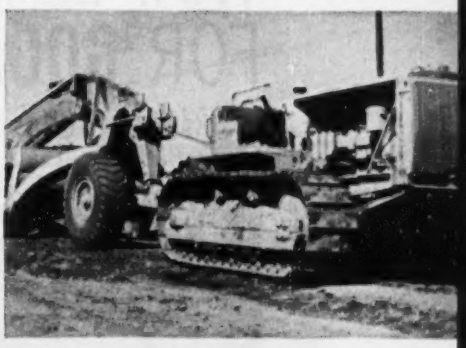
Los Angeles County counsel has ruled that the county can't legally break its contract with the G. Harvey Mydland Co. for lease-purchase of a $3-million welfare building (ENR Dec. 25, p. 65).

Newly elected county supervisor Kenneth Han asked for a ruling when he reversed the majority that had favored the plan previously.

Meanwhile, the supervisors had agreed to appoint a commission to investigate the county's building needs and the various means of financing.

Cutting maintenance costs on

Operation "Big Ditch"



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Lenders, home builders hail charge added to FHA low-cost home mortgages

The Federal Housing Administration last week took a popular step. FHA approved a "service charge" of .5% on mortgage loans on low-cost homes.

The action was limited to Title I, Sect. 8, which covers loans on homes costing roughly up to $5,000. That affects only a small fraction of loans insured by FHA, but many in the mortgage field now hope the "service charge" will be applied to Title II housing loans—the bulk of loans insured by FHA.

Walter L. Greene, FHA commissioner, said the action was limited because mortgage money was tightest in the low-price housing field. Since the start of the program in April, 1950, only 11,360 home loans have been insured by FHA in that category. Greene said that there is heavy demand for homes in the price range up to $5,000 but mortgage money for allotted homes in this price bracket has dried up.

Addition of the service charge was expected to make these small loans—which require more servicing than large loans—more attractive to lending institutions.

Prior to the FHA action, the maximum permitted was 4.75%, of which 4.25% went to the lender and .5% went to FHA as a mortgage insurance premium.

The lender generally paid .5% of his 4.25% interest to the mortgage broker or agent who actually serviced the loan.

That left only 3.75% for the lender—an unattractive proposition for most big lending institutions. And the .5% allowed for servicing was not considered adequate by most mortgage brokers.

FHA's action now permits a total charge of 5.25% on Title I loans up to $4,750.

The additional .5% which is permitted would go to the servicer of the loan.

In the case of a savings and loan or building and loan association that services its own loans, the FHA action would mean, in effect, that it would get 4.75% interest on loans which belongs in this category, rather than 4.25%.

The move found general acceptance from members of the lending fraternity.

Activity This Week

As reported to ENR (in millions of dollars)

Contracts by type of work

	This Week	Cumulative 3 wks 1953	1952	% chge
Waterworks	$4.8	$13.2	$18.6	−29
Sewerage	5.1	16.4	11.2	+46
Bridges	10.8	29.2	9.8	+198
Highways	40.4	95.3	80.2	+19
Earthworks, waterways	1.7	32.5	20.7	+57
Buildings:				
Public	63.1	141.6	91.2	+55
Housg., pub.	18.2	59.2	42.7	+39
Housg., priv.	35.7	149.7	114.4	+31
Commercial	4.0	35.3	25.3	+40
Industrial	324.7	375.3	193.8	+94
Unclassified	40.3	109.8	67.1	+64
Total	**$548.8**	**$1,057.5**	**$675.1**	**+57**

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

ENR indexes		Base Year = 100 1913	1926	1949
Constr. cost.	Jan.	587.27	282.30	123.11
	Dec.	587.49	282.41	123.16
Bldg., cost.	Jan.	425.04	229.76	120.82
	Dec.	424.92*	229.70*	120.79*
Volume	Dec.	421	171	122

* Revised

Bay Bridge boosters hit new legal snags

Plans to build a Richmond-San Rafael Bridge across the north end of San Francisco Bay still are under fire.

Last week, the California Toll Bridge Authority, added a suit filed in Napa County Superior Court by the California Water, Transit and Defense Association, a private organization which wants to stop the $62-million bond issue and to invalidate an authority resolution prohibiting any other crossing within 8 mi. of the proposed bridge.

An earlier appeal was filed Jan. 2 before the State Supreme Court by the North Bay Barrier Association, following rejection of its suit in Sonoma County Superior Court to halt the sale of the bonds (ENR Jan. 8, p. 102). Bond proceeds will not be made available for construction work until the court reaches a decision.

Meantime, in Sacramento the California legislature took under consideration a proposal to block construction of the bridge.

Bills offered in the senate and assembly proposed to invalidate the recent bond sale and to appropriate $200,000 for study of an earth barrier as a substitute for the bridge (the Reber plan, ENR Nov. 24, 1949, p. 29).

Lease-purchase plan under study in West

Los Angeles County's Board of Supervisors has voted to appoint a commission to study the county's building requirements and to report on means of financing them, including the controversial lease-purchase plan.

The commission is an outgrowth of dissension over a lease-purchase contract for a building to house the Charities Department. The building, with an original cost of $3 million, will be rented to the county for $20,300 a month, with an option to buy after 20 years, for $540,000.

The county has contracted for several other buildings on the same basis, with three supervisors generally in favor of lease-purchase, and two opposed. The line-up was reversed when a new supervisor took office, and the new man, Kenneth Hahn, asked the county counsel to investigate legal means of canceling the Charities building contract. Hahn and the other opponents contend lease-purchase is too expensive.

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Beckman application data

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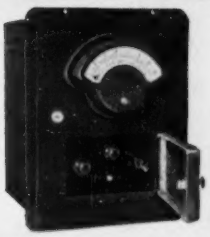

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For full details on the above application see your Beckman Dealer, or write for free Data File 85-21.

The Beckman Model R pH Indicator illustrated above provides, in conjunction with standard recorder-controllers, automatic continuous pH measurement and control in a wide range of industrial processes. It may be wall or panel mounted and the electrodes may be installed directly in pipe lines, vats, or other grounded solutions—*eliminating need for grab-sampling.*

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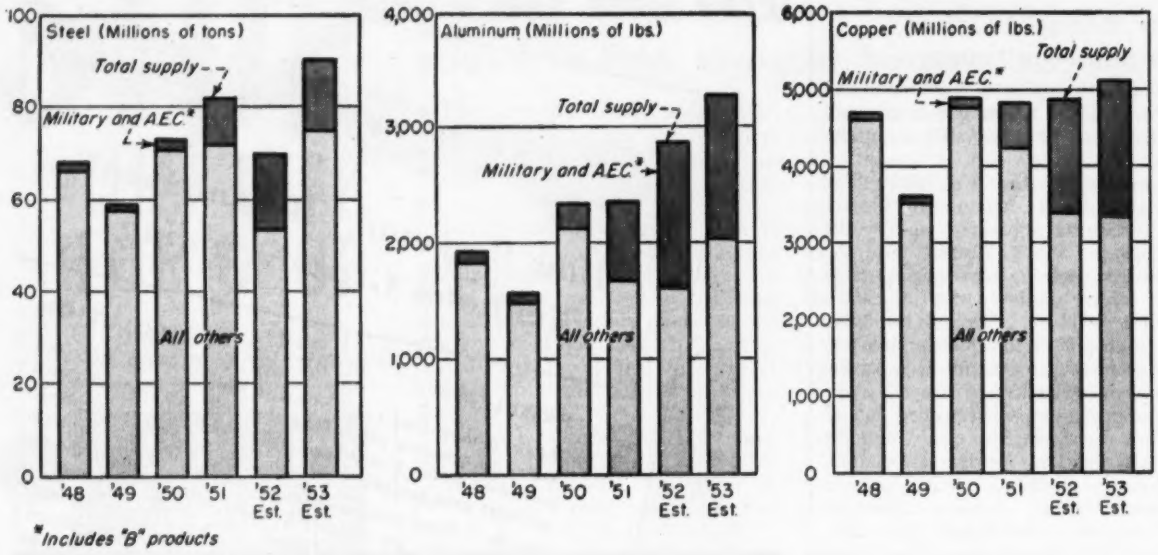


Tax incentives tapering off for defense-plant expansion

ODM reports industrial building for defense nears goals set earlier; steel, aluminum supplies increase

Defense-plant expansion has passed its peak, and fast tax amortization, which was in large part responsible for the build-up, is slowing down.

That was one of the major points made in the latest quarterly report of the Office of Defense Mobilization.

With the curtain coming down on the first phase of the 2½-year-old defense mobilization program, ODM Director Henry H. Fowler took stock of the progress to date. He reported that through December, 1952, the government had issued certificates of necessity for fast amortization for more than 15,000 projects, valued at more than $25 billion.

Applications for tax benefits for new defense plants are coming in more slowly now, Fowler reported. He said the decline had been sharp in the last nine months of 1952.

The backlog of pending cases was reduced from a peak of $13.6 billion in October, 1951, to an estimated $2.8 billion at the end of 1952.

Tied in closely with the fast amortization program was the rise in production capacity for steel, aluminum and other metals, which had been among the early beneficiaries of the tax benefits offered.

This is how the tax amortization program—and private initiative—produced substantial increases in metals capacity:

• **Steel**—The estimated annual U. S. steel capacity is now 116,000,000 tons. At the time of the Korean war outbreak (June, 1950), capacity of U. S. steel mills was 100,000,000 ingot tons.

Some of the largest facilities being built under the expansion program will be pouring steel by mid-summer. It is estimated that the ODM goal of 123,000,000 tons will be reached by the end of 1953.

But there is still a weak link in the chain, according to the government. Fowler said steel-finishing capacity would not be adequate in an all-out war.

• **Aluminum**—Expansion projects now under way will raise primary aluminum capacity from an annual rate of 750,000 tons, in June, 1950, to more than 1,500,000 tons by mid-1954.

An additional rate of 750,000 tons, annual capacity was sought in October. By the end of the year, the government had issued certificates of necessity to producers covering about 164,000 tons of the capacity sought.

• **Power, petroleum and chemicals**—Other programs, vital to the national defense, were big construction customers in the mobilization period, Fowler pointed out. Three of the biggest were electric power, petroleum refining and chemicals. All of them are continuing major expansions.

The expansion of the electric power capacity, made despite severe materials shortages, is significant, especially in the light of ODM goals. At the time of Korea, U. S. electric power generating capacity was 63,000,000 kw. Now it is 81,000,000. And, the goal, which the government hopes will be reached by the end of 1955, is 116,000,000 kw. That indicates a heavy volume of utility construction for the next three years.

Petroleum refining has stepped up from 6,800,000 barrels per day in mid-1950 to more than 7,700,000 barrels per day by the end of 1952.

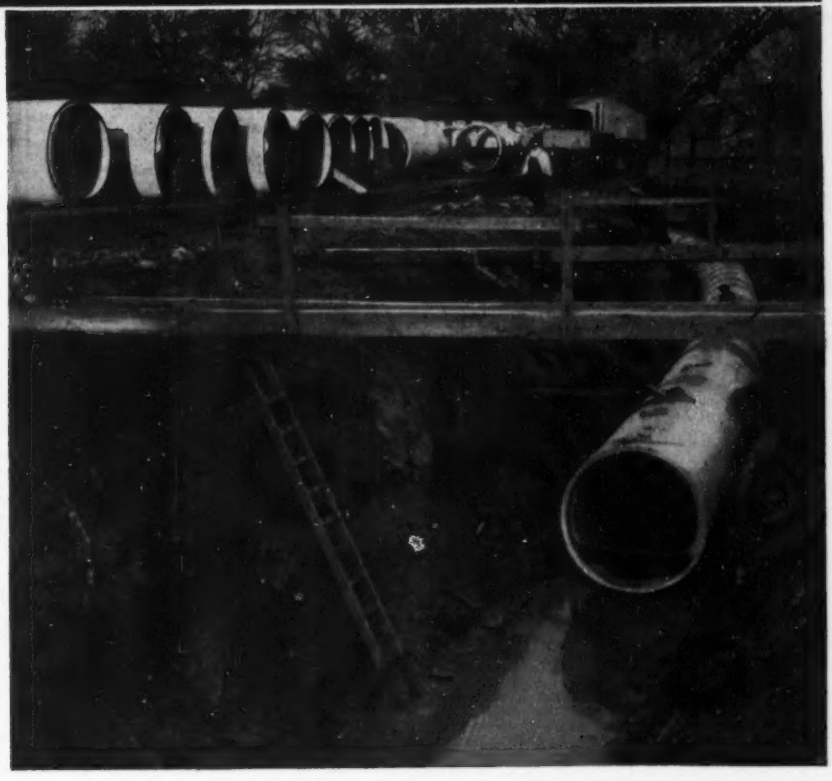
The chemical industry committed to the largest expansion in its history (see also p. 136) will invest approximately $5 billion during the four years 1951 to 1954, Fowler said.

The ODM chief said that tax amortization assistance had been granted for facilities valued at $2.8 billion.

• **More steel, aluminum**—Fowler had encouraging words for contractors worrying about 1953 supplies of steel and aluminum. Both will be available in better quantity. But copper will stay short—probably until 1954, when new capacity will be ready for production.

Total supply of copper CMP products is estimated at 2,590,000 tons in 1953 as compared with 2,435,000 tons in 1952. Increased supplies from both domestic and foreign sources are expected, Fowler said.

A first class pipe installation is not a "pipe dream"



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Bids: February 2, 1953

New Castle Avenue Interchange Lighting

THE DELAWARE MEMORIAL BRIDGE
NOTICE TO BIDDERS
CONTRACT No. 26

Sealed proposals for furnishing and installing New Castle Avenue Interchange Lighting for the Delaware Memorial Bridge will be received by the Delaware State Highway Department at the office of the Director, Delaware Crossing Division, Field Office, Delaware Memorial Bridge, Delaware, until 12 o'clock noon Eastern Standard Time, February 2, 1953, at which time and place said proposals will be opened and read.

The work involves the following principal quantities:

Trenching and Backfilling	7,900 lin. ft.
Underground Metal Conduit	700 lin. ft.
No. 4/0 A.W.G. Lighting Conductor	2,600 lin. ft.
No. 4 A.W.G. Lighting Conductor	15,500 lin. ft.
Light Standards	46

Work on Contract No. 26 shall begin promptly after the execution of the Contract and shall be completed on or before July 1, 1953.

Monthly payment will be made for ninety (90) per cent of the construction completed each month.

Bidders must submit proposals upon forms provided by the Department.

Each proposal must be accompanied by an acceptable surety bond or certified check to the amount of at least ten (10) per cent of the total amount of the proposal.

The Contract will be awarded or proposals rejected within twenty (20) days from the date of opening proposals. The right is reserved to reject any or all bids.

One set of the contract documents may be obtained from the Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, N. Y. after January 10, 1953, upon payment of $10.00. Contract documents need not be returned to the Engineers and the above payment will not be refunded.

The Plans and Specifications and other contract documents may be examined at the office of the Director, Delaware Crossing Division, and at the office of the Engineers, Howard, Needles, Tammen & Bergendoff, 55 Liberty Street, New York 5, N. Y. For information as to the location of the Director's office, inquiry should be made at the Administration Building, Toll Plaza, Delaware Memorial Bridge.

State Highway Department
by: J. H. Tyler, McConnell, Chairman
W. A. McWilliams, Director
Delaware Crossing Division
January 8, 1953

Bids: February 3, 1953

Construction of Structures

PENNSYLVANIA TURNPIKE
COMMISSION
Harrisburg, Pennsylvania

NOTICE TO BIDDERS

Sealed proposals will be received by the Pennsylvania Turnpike Commission, through the Chairman, 11 North Fourth Street, Harrisburg, Pennsylvania, until 10:00 a.m. (Eastern Standard Time), the 3rd day of February 1953, and immediately thereafter will be taken to the Public Utility Commission's Hearing Room No. 1, North Office Building, State Capitol, Harrisburg, Pennsylvania, and publicly opened and read aloud for the following contract:

For the construction of structures, and the grading, drainage and paving of Turnpike Section 33A, part of the Delaware River Pennsylvania Turnpike Extension in Whitemarsh and Upper Dublin Townships, Montgomery County, Commonwealth of Pennsylvania, this section being situated as follows:

Beginning at a point approximately 3,706 feet west of Traffic Route 731 at Turnpike Station 704+50 in Whitemarsh Township, Montgomery County, thence in an easterly direction 19,095.03 feet to a point approximately 4,708 feet east of Traffic Route 152 at Turnpike Station 895+04 in Upper Dublin Township, Montgomery County, a distance of approximately 3.62 miles.

The approximate quantities of the principal items are as follows:

Class 1 Excavation	574,400 cu. yds.
Class 2 Excavation	16,000 cu. yds.
Special Subgrade	269,800 sq. yds.
Reinforced Concrete Pavement	119,450 sq. yds.
Class "A" Concrete	4,435 cu. yds.
Class "B" Concrete	4,510 cu. yds.

Copies of plans, specifications, and other contract documents, including, cross-sections, are on file and open to public inspection at the offices of the Pennsylvania Turnpike Commission located at Harrisburg, Pennsylvania, on 13 January 1953. Plans, specifications, cross-sections, and other contract documents will not be available before this date for inspection or for mailing to prospective bidders. Copies of specifications for grading, drainage, paving and structures may be purchased from the Pennsylvania Turnpike Commission for the sum of five (5) dollars per copy. Copies of cross-sections may be purchased from the Pennsylvania Turnpike Commission for the sum of fifty (50) dollars per set.

Plans and contract documents, for this section, exclusive of cross-sections and specifications may be obtained from the Commission upon deposit of ten (10) dollars for each set, such deposits to be refunded in full to any actual bidder upon return of such documents in good condition within five (5) days after the date of the opening of the bids. Refund will be made for all plans, contract documents, and cross-sections returned, if the project is withdrawn from letting by the Pennsylvania Turnpike Commission. Remittances are payable to the Pennsylvania Turnpike Commission and must accompany requests for drawings, specifications, contract documents, and cross-sections.

The character and amount of bid security to be furnished by the bidder is stated in the Instructions to Bidders.

The Commission reserves the right to waive any informalities in or to reject any or all bids.

No bids may be withdrawn for thirty (30) days after the scheduled closing time for receipt of bids.

PENNSYLVANIA TURNPIKE
COMMISSION
James F. Torrance,
Secretary and Treasurer
Harrisburg, Pennsylvania
7 January 1953

Bids: February 26, 1953

Improvements to Water Supply System

City of St. Petersburg, Florida

Sealed proposals, invited by the City of St. Petersburg will be received by the City Manager at the Municipal Building, St. Petersburg, Florida until 2:00 P. M., Eastern Standard Time, Thursday February 26, 1953, at which time they will be publicly opened and read aloud, for the construction of Improvements to the Water Supply System.

The Instructions to Bidders, Proposal, Form of Bid Bond, Agreement, Specifications, Plans, Form of Performance Bond, and other Contract Documents may be examined at the office of the City Engineer, Municipal Building, St. Petersburg, Florida, and at the office of Greeley and Hansen, Engineers, 220 South State Street, Chicago 4, Illinois. Copies of the Contract Documents may be obtained from the Engineers or from the City Engineer upon the deposit of Twenty-five Dollars for each set, to be refunded upon the return of such set in good condition within 30 days after the opening of proposals.

Each proposal must be submitted on the proposal forms included in the Contract Documents and must be accompanied by a certified check on a solvent bank or trust company, made payable to the City of St. Petersburg, in an amount of not less than five percent of the total bid, or a bid bond of like amount, on the form set forth in the Contract Documents, as assurance that the bid is made in good faith. Cashier's checks will not be accepted.

Bidders must enclose with their proposals, in a separate sealed envelope complete information as to experience, equipment, and financial condition on the form provided. Failure to submit this statement will constitute basis for rejection of the proposal.

The City of St. Petersburg reserves the right to reject any or all bids, to waive any informalities in bids, to readvertise, and to accept the bid which is deemed most favorable to the best interests of the City.

CITY OF ST. PETERSBURG
By /s/ Ross E. Windom, City Manager
Dated January 6, 1953
St. Petersburg, Florida

Bids: January 19, 1953

Furnishing and Delivering Standard Manhole Frames, Covers, and Steps

WASHINGTON SUBURBAN SANITARY
COMMISSION
INQUIRY NO. 002450

Sealed proposals for furnishing and delivery three hundred (300) W. S. S. C. Standard Manhole Frames and Covers (S) and twelve hundred (1200) W. S. S. C. Manhole Steps will be received in the office of the Purchasing Agent, Room 3 of the Washington Suburban Sanitary Commission, 4017 Hamilton Street, Hyattsville, Maryland, until Monday, January 19, 1953 at 11:00 A.M., Eastern Standard Time, at which time and place they will be publicly opened and read.

Specifications and drawings may be obtained from W. R. Douglas, Purchasing Agent of the Commission, 4017 Hamilton Street, Hyattsville, Maryland.

Raymond W. Bellamy, Chairman
L. S. Ray
J. Norman Ager
Commissioners

Attest:
James B. Parkhill
Secretary-Treasurer

U. S. Government

Department of Commerce, Bureau of Public Roads, January 5, 1953. SEALED BIDS will be received at the office of the Division Engineer, Bureau of Public Roads, 1440 Columbia Pike, Arlington, Virginia, until 11:00 a.m., E.S.T., JANUARY 30, 1953, for Project 1A11, Baltimore-Washington Parkway, District of Columbia. 0.197 mile Grading and Drainage west of Anacostia River. The approximate quantity of the principal item is 260,000 cu. yd. Excavation for Borrow. Minimum wage rates have been fixed as required by law. Plans, specifications, and proposal forms are available upon request at the address given above. H. J. Spelman, Division Engineer.

GOVERNMENT OF THE DISTRICT OF COLUMBIA, DIRECTOR OF HIGHWAYS, D. C., January 15, 1953. SEALED PROPOSALS will be received in Room 429, District Building, 14th and E Streets, N.W., Washington 4, D. C., until 2:00 P.M., February 11, 1953, EASTERN STANDARD TIME, and then publicly opened and read for constructing two (2) bridges of reinforced concrete of rigid frame type on New York Avenue, N.E., respectively. The bridge over the Pennsylvania Railroad has six spans with an approximate overall length of 334 feet. Approximate quantities of major items are: 21,200 cubic yards excavation, 11,000 cubic yards concrete, 2,095,000 pounds reinforcing steel, 7,500 square feet stone facing, 82,600 pounds steel false-work beams. The bridge over South Dakota Avenue, N.E., has one (1) span 66 feet 11 inches clear. Approximate quantities are: 22,000 cubic yards excavation, 2,142 cubic yards concrete, 253,000 pounds reinforcing steel, 3,300 square feet of stone facing. Alternate proposals will be received for either bridge or both bridges. Proposal forms, plans and specifications may be obtained from the Secretary, Contract Board, D. C., Room 427, District Building, upon the deposit of a certified check made payable to the Collector of Taxes, D. C., in the amount of Twenty Dollars ($20.00). (Telephone National 8-6000, Ext. 2378)

OFFICIAL PROPOSALS

Bids: January 29, 1953

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, Canal Law, and Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid funds, sealed proposals will be received until ten-thirty o'clock A.M., eastern standard time on the 29th day of January 1953, by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
		DISTRICT No. 1				
		G. L. NICKERSON, 353 Broadway, Albany, 1, N. Y.				
Schenectady	M 53-1	Movable Dam No. 5, Lock 9, 0.11 Barge Canal, Town of Rotterdam		Repairing Substructure of South Span and Misc. Work	$51,000 Plans $15	$926,038
		DISTRICT No. 2				
		L. KETCHUM, 109 No. Genesee St., Utica, New York				
Oneida	FAC 53-1 FASH 53-1 FARC 53-2	City of Rome: Black River Boulevard Pts. 1 & 2 Rome-Northwestern Pt. 2, S. H. 562 Proj. U-415(8)	2.43	Asp. Conc. Ty. 1-A, Opt. = 2.36 Mi. Misc. Work = 0.07 Mi.	$54,000 Plans $25	978,000
		DISTRICT No. 4				
		E. G. YOUNGMANN, Barge Canal Terminal, Rochester, N. Y.				
Monroe	LOSP 53-1 RC 53-6	Lake Ontario State Parkway Sect. C West Greece-Menitou Beach, S. H. 1281	0.37	9" Cem. Conc. Pavt. 24' Var. Wide = 0.23 Mi. Fdtn. Crse. Gravel = 0.02 Mi. Misc. Work = 0.12 Mi. Gr. Sep. Rigid Rame 91.7	$18,000 Plans $10	312,000
Monroe	FAC 53-2	Ridge Road West: City of Rochester Proj. U-402(8)	0.78	Traffic Signal System	$2,000 Plans $10	36,000
Monroe	FARC 53-7	Rochester-Scottsville, S. H. 79 Proj. U-762(2)	1.01	9" Cem. Conc. Pavt. 24' Wide = 0.96 Mi., Misc. Work = 0.05 Mi., 3 Sp. Alpha I Beam 138	$22,000 Plans $10	399,000
Ontario	FASS 53-1	Canandaigua-Bristol Center-Jones Cors. Pt. 3 & 1, C. R. 32 Proj. S-387(1)	4.73	Bit. Mac. Pen. Meth.	$18,000 Plans $15	321,000
Ontario	OT 53-3 RC 53-8 ST 53-3	N. Y. State Thwy-Ontario Sect. Subd. 15 & 16 (Port Gibson Rd.— Seneca Co. Line); Phelps-Newark Pt. 1, S. H. 1726; Thy. Geneva-Lyons Pt. 2, S. H. 5252 & 11 Cross and Acc. Rds.	5.29 Acc. 12.70	9" Cem. Conc. Pavt. 26@25 Var. Wide = 13.11 Mi. Asp. Conc. Ty. 1-A, Opt. = 2.27 Mi. Bit. Treat. Gravel = 1.59 Mi. Fdtn. Crse. Gravel = 0.33 Mi. Bit. Mac. = 0.15 Mi., Misc. Work = 0.54 Mi. 10 Alpha I-Beam Gr. Sepa 2 I-Beam Gr. Sepa. 1 Conc. Closed Box Gr. Sep. 2 Alpha I-Beam Brs. 2 I-Beam Brs.	$508,000 Plans $100	9,234,000
		DISTRICT No. 5				
		C. R. WATERS, District Engineer, 65 Court St., Buffalo, N. Y.				
Erie	OT 53-1 ST 53-2	N. Y. Thruway-Ontario Section-Sub. 15 (Ransom Rd.Genesee Co. Line); 4 Co. Rd. Cross Roads and 4 Relocated Marginal Rds.	2.30 Acc. 7.68 Thy.	2 Crse. Cem. Conc. Pavt. 26@25 Wide = 7.64 Mi. Bit. Mac. Ty. 1 = 2.30 Mi. Misc. Work = 0.04 Mi. 4 Gr. Seps. Alpha I-Beams 226', 222', 236' and 232'	$225,000 Plans $50	4,050,000
		DISTRICT No. 8				
		J. S. BIXBY, District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.				
Columbia	FARC 53-3	Hudson-Hollowville, S. H. 650 Proj. F & U 564(5)	0.40	9" Cem. Conc. Pavt. 24'-36' Wide, Alpha I-Beam Br. 300'	$22,000 Plans $10	397,000
Westchester	H.T. 53-2	N. Y. State Thwy-Hudson Sect.-Sub. 9B (Tappan Zee Bridge) (Substr. Bents 156 thru 165)	0.10	Reinf. Conc. Rigid Frame Bents and Misc. Work	$57,000 Plans $10	1,036,000
Rockland & Westchester	H.T. 53-1	N. Y. State Thwy Hudson Sect.-Sub. 9B (Tappan Zee Bridge) (Superst. So. Nyack Abut. to Bent. 165)	1.60 1.60	Plate Girders and Alpha I-Beams	$205,000 Plans $15	3,762,000
		DISTRICT No. 10.				
		J. J. DARCY, Dist. Engr., Montauk Highway at Little East Neck Rd., Babylon, L. I., New York				
Bronx	FAMDE53-1	Major Deegan Expressway (Cont. 13) (Interchange at Grand Concourse) Proj. U-1082(6)	1.22	Granite Block Pavt. = 0.19 Mi. 9" Cem. Conc. Pavt. 2@32' Wide = 0.88 Mi. Misc. Work = 0.15 Mi. Gr. Sep. Alpha I-Beam 167'	$100,000 Plans $50	1,785,000
Suffolk	FARC 53-1	Cold Spring-Huntington Fort Salonga Pt. 3, S. H. 8158 Smithtown-Fort Salonga Pt. 2, S. H. 1291 Proj. F-272(3)	3.32	Asp. Conc. Ty. 1-A, Opt.	$20,000 Plans $10	371,000

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts and Accounts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for Plans and Proposal Forms for each contract is indicated above. A refund will be made in full to bidders for return of one set, in good condition, within 30 days of award, or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders."

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY
SUPT. OF PUBLIC WORKS

OFFICIAL PROPOSALS

Bids: January 27, 1953

Route 21, Section 4-C

STATE OF NEW JERSEY
STATE HIGHWAY DEPARTMENT
TRENTON

NOTICE IS HEREBY GIVEN that sealed bids will be received by the State Highway Commissioner for:

Route 21, Section 4-C, from Oriental Street to Chester Avenue, Viaduct, Walls and Partial Road Construction, City of Newark, Essex County. Federal Project No. U-126(3). Length 0.566 mile.

The principal items of construction are:

Estimated	Roadway Items
11,436	cu. yds. Roadway Excav.—Earth
3,629	sq. yds. Macadam Base
660	tons Bituminous Conc. Surface
3,235	lin. ft. Rein. Conc. Culvert Pipe
	Bridge Items
12,749	cu. yds. Concrete in Structures
1,473	lin. ft. Conc. Balustrade
4,049	lin. ft. Concrete Parapet
1,629,820	lbs. Rein. Steel in Structures
1,297,000	lbs. Structural Steel
40,095	lin. ft. Treated Timber Piles
	L.S.—Lighting System

Bids for the above will be received at the office of the State Highway Department, Assembly Room, Room 140, in the State Highway Office Building, 1035 Parkway Avenue, Trenton, New Jersey, on Tuesday, January 27, 1953, at eleven o'clock (11:00 A.M.—EASTERN STANDARD TIME), and will be opened and read immediately thereafter.

The receipt and opening of bids is subject to the proper qualification of the bidder in accordance with the provisions of the prequalification law and the regulations adopted by the State Highway Commissioner. Bidders must also submit a revised financial statement and statement of plant and equipment with their bid.

NOTE: The proposed project is a "Federal Aid Project" authorized by the provisions of Title 27 of the Revised Statutes of New Jersey and supplements and by P.L. 769, 81st Congress, and is to be performed in accordance with the special provisions and requirements of the Bureau of Public Roads, Department of Commerce, as outlined in the specifications, which provisions require that labor be employed from lists furnished by the N. J. State Employment Service, 309 Washington Street, Newark, New Jersey. The attention of bidders is directed to the special provisions covering subletting or assigning the contract. The minimum wage paid to all common labor employed on this contract shall be $0.75 per hour. The minimum wage paid to all intermediate grade of labor employed on this contract shall be $1.00 per hour. The minimum wage paid to all skilled labor employed on this contract shall be $1.50 per hour.

Drawings, specifications and form of bid, contract and bond for the proposed work are on file in the office of the State Highway Department, Trenton, N. J., and may be inspected by prospective bidders during office hours. Plans will be furnished on a deposit of Ten Dollars ($10.00) for each set of plans upon application to A. Lee Grover, Chief Clerk, State Highway Department, Room 139, State Highway Office Building, 1035 Parkway Avenue, Trenton, N. J. Bids must be made upon the standard proposal forms in the manner designated in the standard State Highway specifications and must be enclosed in sealed special addressed envelopes bearing the name and address of the bidder and work bid upon on the outside, and must be accompanied by a certified check drawn to the order of the Treasurer of the State of New Jersey for not less than ten percent (10%) of the amount of the bid, provided that the said certified check shall not be less than $500.00 nor more than $20,000.00 and must be delivered at the above place on or before the hour named. Copies of the standard proposal forms and special addressed envelopes will be furnished on application. Bids not enclosed in sealed special addressed envelopes will be considered informal and will not be opened. The right is reserved to reject any or all bids.

Signed: R. J. Abbott
State Highway Commissioner

U. S. Government

BIDS FOR LEVEE WORK—Memphis District, Corps of Engineers, U. S. Army, P. O. Box 97, Memphis 1, Tenn. Sealed bids will be received at this office until 11:00 a.m., C.S.T., 5 February 1953, and then publicly opened, for approximately 27,500,000 cubic yards channel excavation and embankment along the St. Francis River in St. Francis and Lee Counties, Arkansas. $25.00 deposit required on plans. Information on request.

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Submit Complete Resume—Education, Experience and salary expected.

Solvay Process Division
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GENERAL PAVING SUPERINTENDENT

Aggressive, imaginative, fast-moving organizer to handle asphalt resurfacing, concrete roads and storm sewer systems. Excellent opportunity for experienced man. Top salary and bonus.

P-6363, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

EXCEPTIONAL OPPORTUNITY

Engineer with Commercial and Publicity Experience 35 to 55 years of age for publicity and promotional work with organization operating on nation-wide basis representing a concrete reinforcement product. Work will require some traveling from office located in Eastern United States. State education, experience, qualifications and salary requirements. Your reply will be held confidential.

P-6517, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

BRIDGE DESIGNERS. Structural Engineers and Draftsmen with highway bridge experience. Interesting projects, permanent positions, good salaries. Annual bonuses. Frank D. McEnteer, Engineer, 504 Baltimore Ave., Clarksburg, W. Va.

CIVIL ENGINEERS—3 men, age 25-35, some construction experience. Background in soil mechanics and ground water preferable but not necessary. Permanent opportunity with long-established leading firm in interesting phase of foundation construction. Vacations and Holidays with pay. Salary commensurate ability. Opportunity for advancement—others in these positions have steadily increasd their earnings. Must be willing to travel (all expenses paid). Location; 1 man Midwest, 1 Southwest, 1 Northeast. Replies held in confidence. P-6534, Engineering News-Record.

DRAFTSMEN STRUCTURAL Steel Detailers and Checkers, Long range work—top rates, experienced men only (2 yrs. min.). Send resume of work history, experience, etc. Charles Cohn & Son, 614 Glenn Bldg., Atlanta, Georgia.

DESIGNER—EXPERIENCED in fabrication and design of transmission or TV towers. Large, well financed company establishing new division offers excellent opportunity. Salary dependent upon qualifications. Send complete resume, in confidence, to P-6440, Engineering News-Record.

ESTIMATOR — EXPERIENCED in complete quantity take off in General Contracting business. Location in southeastern states. State experience, references and salary expected. P-6449, Engineering News-Record.

ESTIMATOR WANTED: Well known West Coast Engineering and Construction firm is expanding activities and has top position for an Estimator with supervisory ability. Must be thoroughly qualified in all phases of estimating including costs, materials and manpower for widely varied engineering, construction and maintenance programs, domestic and foreign. Send complete experience resume. P-6492, Engineering News-Record.

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College House Offices - HARVARD SQUARE, CAMBRIDGE, MASS.

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NATIONAL SALES MANAGER

with bar joist experience in estimating selling setting up agents and distributors to make headquarters in New York City. Extensive travel required (Western States excluded). State salary now earning and expected.

SW-6500, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

DISTRIBUTOR OR ENGINEERING REPRESENTATIVE. NATIONAL CHAIN LINK FENCE MANUFACTURER. SEVERAL FRANCHISES AVAILABLE FIRST OF YEAR.

RW-6367, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

POSITIONS VACANT

EXPERIENCED, HIGH caliber paving superintendent capable of handling airport, municipal and highway paving. Applicant must be energetic, reliable and sober. Work located in midwest. Furnish full qualifications, experience and references; also salary required. P-6522, Engineering News-Record.

GENERAL SUPERINTENDENT — Large defense construction and similar work in Southern States. State complete experience, references and salary expected. P-6415, Engineering News-Record.

HIGHWAY ENGINEER experienced in concrete pavement design, construction and maintenance and with working knowledge of soils mechanics. West Central Location. Requires travel over 6 or 7 state area. No selling but must like to meet people and be able to talk in public. Pleasant working conditions. Permanent position for right man. P-6413, Engineering News-Record.

PROJECT MANAGER—Experienced in large government and industrial project. State complete experience and references together with salary expected. For work in Southern States. P-6414, Engineering News-Record.

PROJECT MANAGER or General Construction Supt., 47, Civil Engineer, 25 years construction experience, water and Sewerage systems, Multiple story bldg., Commercial and Water front, Highways and Bridges. Sober, aggressive and reliable. P-6409, Engineering News-Record.

WANTED: BRIDGE foreman capable of handling all phases of form work, pouring concrete, etc. Salary and bonus; good opportunity; work in Central New York State. Write P-6514, Engineering News-Record.

WANTED: CONCRETE paving foreman capable of taking charge of entire operation including setting up of batch plant, etc. Write P-6515, Engineering News-Record.

POSITIONS WANTED

CIVIL, MINING, Sanitary Engineer, supervisory ability field and office work. Experienced design water, sewers, pavements, pumping stations. Interested design or technical representative position; foreign work o.k.; speaks English, Spanish, Portugese; married, 3 children. PW-6490, Engineering News-Record.

CONCRETE ENGINEER, BCE, PE; age 33; estimate, price, detail, design, field supv. and layout, formwork, purchasing. PW-6526, Engineering News-Record.

CONSTRUCTION ENGINEER or Assistant Superintendent. 17 years experience, foreign and domestic. Heavy buildings, marine work, water supply, hydro-electric, irrigation. Fluent Spanish. Anywhere in U. S. PW-6511, Engineering News-Record.

CONSTRUCTION SUPERINTENDENT. Concrete Pipe Manufacturer. Considerable experience. PW-6386, Engineering News-Record.

SUPERINTENDENTS AND PROJECT MANAGERS TRAINING COURSE

All instruction by mail. Send today for sample lesson and complete details

GEO. E. DEATHERAGE & SON
5 E. Preston St. Baltimore 2, Maryland

POSITIONS WANTED

EXECUTIVE ENGINEER, long experience, management large company, heavy construction docks, foundations, tunnels, difficult subaqueous structures, etc. PW-5428, Engineering News-Record.

ENGINEERING MANAGER background in complete Plant Design, preparation and analysis of budgets for industrial installations. Bulk of experience in detergents, Pharmaceuticals and organic chemicals. PW-6457, Engineering News-Record.

PROJECT ENGINEER, young energetic, graduate. Experienced field and office on pulpmills, steam plants, hangars, barracks, airports, docks, railroad and highway construction, surveying. Available for difficult assignment only, at administrative level. PW-6458, Engineering News-Record.

ENGINEER-REPRESENTATIVE: Engineering and construction, industrial and public works. Wide experience U.S. and abroad. Contract negotiations, sales, liaison, coordination, management. Available to reputable firms on associate or consulting basis. Address "Engineer", P.O. Box 2822, Washington 13, D. C.

EXECUTIVE ENG'N-Supt. Formerly qualified journeyman. Five trades. Aggressive, ample know-how and expert improvising in field. Will assume responsibility for layout selecting equipment and production. Cost conscious. Review plans, prepare schedules industrial construction, schools, hospitals, housings, military installations. Maintain client and labor relations. Licensed Engineer New York. Now available. PW-6488, Engineering News-Record.

GRADUATE CIVIL Engineer experienced 3 years construction, one year design, desires permanent position with better future, N.Y., N.J. metropolitan area. Excellent references. PW-6512, Engineering News-Record.

STRUCTURAL ENGINEER, Civil grad., Reg. P.E. in N.Y. 12 yrs. experience in building design, construction and estimating. Permanent position with advancement opportunity or association desired. PW-6538, Engineering News-Record.

PROJECT MANAGER or General Construction Supt., 47, Civil Engineer 25 years construction experience, water and Sewerage systems, Multiple story bldg., Commercial and Water front, Highways and Bridges. Sober, aggressive and reliable. PW-6529, Engineering News-Record.

SELLING OPPORTUNITY WANTED

SALES REPRESENTATIVE now calling on building and general contractors in Southeast desires change. Equipment or supply or items. SA-477, Engineering News-Record.

BUSINESS OPPORTUNITIES

PROFESSIONAL ENGINEER seeks partnership in small construction company or form partnership with right man. BO-6485, Engineering News-Record.

WANTED: ASSOCIATE take half interest and management in general contracting firm. Present owner has other interest taking up his time. We have plenty of equipment. Good Business—Specializing in Gunite work. Must invest $25,000.00—Need not be all cash. Must devote entire time to business. Located Miami, Florida. Apply BO-6507, Engineering News-Record.

ATTENTION CONTRACTORS:

List your equipment with us for quick sales. We also store your equipment in our yard for a small fee until sold if you desire.
Consult us for your equipment needs.

FINEST CONSTRUCTION & EQUIPMENT CORP.
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Openings in Cleveland and other various offices offering good salaries with long term employment opportunities for qualified personnel in the following categories

Structural—Engineers and designers experienced in structural steel and reinforced concrete design on industrial and commercial buildings

Piping—Engineers and designers experienced in Process installations

Architectural—Architects and architectural designers experienced in industrial and commercial building design

Estimating—Estimators experienced in industrial and commercial buildings and mechanical installations

Specifications—Specifications writers experienced in writing specifications for industrial and commercial buildings

Costs & Methods—Engineers experienced in costs, methods and planning on industrial building projects

These positions offer excellent working conditions with paid vacations, sick leave and participating group insurance program.

Replies will be treated confidential and arrangements will be made to interview selected applicants. Please submit complete resume stating experience, education, salary required and date available to

THE H. K. FERGUSON CO.

ENGINEERS AND BUILDERS

FERGUSON BUILDING CLEVELAND 14, OHIO

Engineers

We need two engineers. Jobs mean interesting work on concrete and asphalt machinery in fast growing company in Middle Eastern State. Good schools and delightful small town conditions in pleasant country assure enjoyable living. Give full details in 1st letter.

P-6502, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

WANTED

An Alert Mechanical Engineer with Some Knowledge of Electrical Engineering . . . Must Be a Good Calculator . . .

PHILIPS & DAVIES, INC.
KENTON, OHIO

ENGINEERS

Structural, mechanical, and electrical for work on hydro-electric power developments. Write giving full experience record and qualifications.

HARZA ENGINEERING COMPANY
400 West Madison Street Chicago, Illinois

HELP WANTED MALE

STRUCTURAL STEEL DETAILER

Experienced, first-class, must be a civil engineer graduate, permanent position.

P. O. Box 955 New Haven, Connecticut

ENGINEER

Perhaps you can move up a step! Here's an opportunity to really broaden your thinking and expand your full ability. A fast growing Eastern Manufacturer is looking for a Chief Engineer. A knowledge of concrete and asphalt is desirable. High-grade, small community surroundings with good schools make pleasant, easy living conditions. Only letters giving full particulars will be considered.

P-6501, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

STRUCTURAL ENGINEERS

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STRUCTURAL STEEL DETAILERS

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CONCRETE PRESSURE PIPE SPECIALISTS

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P-6406, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

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Or General Superintendent experienced in supervising heavy construction projects such as Dams, Power-Houses, etc. by large middle western contractor operating on a national scale. Give full experience record, education, availability and salary desired in first reply. All replies confidential.

P-6452, Engineering News-Record
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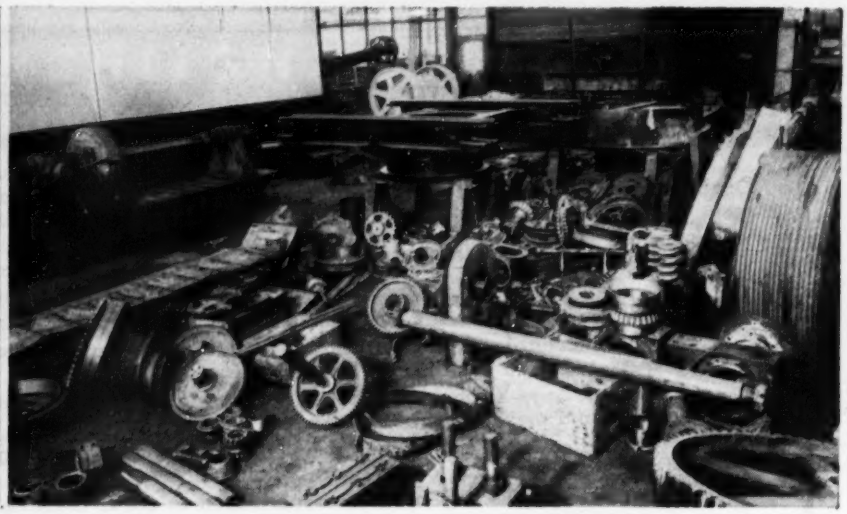

THE REBUILDING JOB WE DID HERE...

can be done on your equipment, too!!!

AFTER

L. B. SMITH rebuilds equipment, it is ready for many years of further use. Wherever possible, new design is incorporated into the rebuilt machine, increasing the productive capacity. And, since under and oversizing shafts, bearings, etc. is frowned upon, no trouble is experienced in future maintenance.

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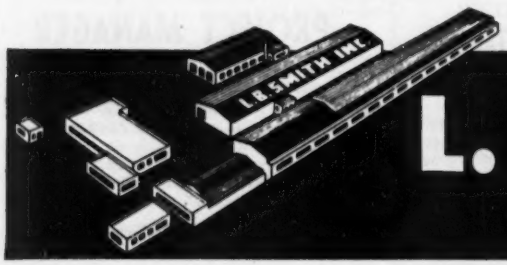
Have you equipment we can rebuild? You are invited to use our facilities — the world's largest equipment rebuilding facilities . . . where rebuilding is a business — with over 25 years of experience on all types of construction equipment — where trained mechanics with precision tools — can build back into your equipment many years of additional and efficient usefulness — using the same thoroughness employed in rebuilding our own used equipment. Write today



L. B. SMITH INC.

CAMP HILL, SUBURB OF HARRISBURG, PA.

L. B. SMITH INC.

New and Used Equipment News

Prepared Monthly by Ed Woolford at Camp Hill, Pa.

VOL. 1 NO. 10

AIR COMPRESSORS

Gardner-Denver 500 cu. ft. diesel, new condition.
Gardner-Denver 500 cu. ft. diesel, good operating condition.
Schramm 105 cubic foot gas powered compressor on 4 steel wheels.
Worthington two-stage, water-cooled, vertical 250#, 60 CFM, new condition.
Paving breakers, jackhammers, wagon drills, tie tampers.

QUARRY EQUIPMENT & BINS

2540 Cedarapids AAAA primary unit on rubber, diesel power. Rebuilt.
2036 Cedarapids AAA primary unit on rubber, diesel power. Rebuilt.
1036/2418 Cedarapids Jr. Tandem unit on rubber.
Cedarapids Rock-It plant w/2025 jaw, 3033 hammermill. New.
1236 Cedarapids Model 6C plant. New.
4033 Cedarapids Model 6C plant. New.
2020 Cedarapids double impeller. New condition.
4024 Cedarapids roll. Rebuilt.
3018 Cedarapids roll. Rebuilt.
1236 Cedarapids twin jaw crusher. New.
10x7 Allis Chalmers lake type jaw crusher. Rebuilt.
#1 Cedarapids Kubit impact breaker. New condition.
B-3 Jeffrey swing hammer pulverizer. Rebuilt.
36" x 14' apron feeder.
42" x 10' Cedarapids feeder.
4' x 6' Kennedy Van Saun single deck screen.
3' x 6' Kennedy Van Saun triple deck screen.
60" dia. x 14' long Traylor revolving screen. Rebuilt.
36" Wemco single pitch sand screw. New condition.
15 cu. yd. Cedarapids sand drag. New.
16" x 90' bucket elevator.
60-ton, 2-compartment, 8' x 18' storage bin w/clam gates.
100-ton, 2 compartment, 13'x23' storage bin.
Special bins to your specifications.
Conveyors—18"—24"—30"—36". Also belt.

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28FD Euclid rear dumps.
1½-ton Ford with any body.
2000-gallon tanks on semi-trailer mounting.
New and rebuilt dump bodies.

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1½ KW to 125 KW, alternating and direct current gasoline and diesel powered.

SHOVELS—CRANES

Lorain 77B, 1½-yd. diesel Cat. D13000.
Lorain 75, 1¼-yd. diesel.
Lorain 40 truck crane on Mack 3-axle truck.
Lorain TL, ¾-yd. diesel. Any front.
Unit 514, ½-yd. gasoline crawler shovel. Good condition.
Osgood 200, ½-yd. gas hoe.

SHOVEL & CRANE ATTACHMENTS

Lorain L-41 Chain Crowd Shovel Attachment. Rebuilt.
Lorain 40 Hi-Lift shovel attachment.
P&H 203 shovel attachment.
Chain crowd Lorain 30A shovel attachment.
Bucyrus-Erie 1½-yd. rock bucket.
McCaffrey Model 648 for 1¼ to 2-yd. crane.
McCaffrey Model 636 for ¾-yd. to 1-yd. crane.

BACKHOE BUCKETS & ATTACHMENTS

Lorain 30 hoe attachment complete.
¾-yd. Lorain, 40, LBS #6105. 44" cutting width.
¾-yd. Amsco 40" cutting width, LBS #8101.

CLAM—DRAG—SCRAPER BUCKETS

LIFTING MAGNETS

1—45" Ohio lifting magnet, rebuilt.

SHOVEL DIPPERS

Lorain 41, ¾-yd. LBS #8600, rebuilt.
New Lima 1-yd. Amsco, LBS #2295.
Bucyrus-Erie 1¼-yd. gas air, LBS #3782, fair.
Lorain 75B, 1½-yd. manganese bucket, LBS #8538.
Lorain 75B, 1¼-yd. extended lip, 1¾-yd. LBS #2260.
Pettibone-Mulliken 2-yd. Lorain 82 or 820, manganese, LBS #5361.
Pettibone-Mulliken 2-yd. for 3500 Manitowoc LBS #5763.
Esco 2½-yd. cast weld dipper with bail & teeth.

CONCRETE EQUIPMENT

Blaw-Knox gas-electric finisher, 10½'-12½', rebuilt.
Koehring 10'-12' finishers, rebuilt.
Cleveland formgrader, new 1944 rebuilt.
Corr formgrader, new 1944, rebuilt.

TRACTORS

TD-24 International with Bucyrus-Erie angle-blade.
TD9 International diesel with 1 yd. Loadover.
Model CR Tournapull w/16-yd. Model E16 Tournarocker, rebuilt.

WELL DRILLS & TOOLS

Sanderson-Cyclone #42 well drill, new.
Sanderson-Cyclone #44 well drill, new.
Bits—Stems—Bailers—Sockets—Etc.

Barber-Greene 44C Trenching machine 18" to 24" cutting width, 7' depth.

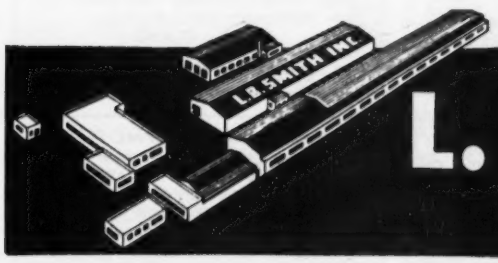
PUMPS

New Layne Bowler type 18 deep well pump with right angle gear drive. 3000 GPM at 120' TDH.
Used and rebuilt pumps, all sizes, gasoline, electric or diesel.

GASOLINE AND DIESEL ENGINES

Caterpillar D-13000, rebuilt.
Murphy ME-6, & ME-46, rebuilt.

***Phone* HARRISBURG, PA. 7-3431**



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UNIT CAPACITIES—10 TO 1875 KVA

A.C.—50 AND 60 CYCLES

VARIOUS VOLTAGES

A PARTIAL LISTING OF OUR INVENTORY

KW	Make	Model	HP	RPM	KW	Make	Model	HP	RPM
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1125	Fairbanks Morse	38D	1600	720	220	Enterprise	DSG-6	360	450
1100	General Motors	16-278A	1600	720	300	General Motors	8-268A	450	1200
1000	General Motors	16-567B	1440	720	250	Fairbanks Morse	37-E	375	360
750	General Motors	12-567	1080	720	200	General Motors	6-268A	350	900
500	Baldwin	VO-8	750	514	100	Worthington	BB-5	150	600
500	General Motors	8-278A	750	720	100	General Motors	3-268A	150	1200
400	General Motors	8-567	720	720	60	General Motors	6-71	90	1200
400	Ingersoll-Rand	8-8	600	720	30	Internat'l Harvester	UD-14	45	1200
380	Baldwin	VO-6	510	450					

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1—Caterpillar Tractor D6 with Cat. DD-PCU and Angledozer, late model.
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1—500' Ingersoll Rand Air Compressor mounted on rubber tires.
1—Lorain TL-20, ½ yd. self propelled shovel, 4 yrs. old.
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1—Autocar 1946 model with Rogers 20 ton low boy trailer.
1—Caterpillar D8 Tractor with cable controlled angledozer, 2U series.
1—Lorain T1-20 (TL-20) Truck Crane, late model, like new.

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12" Snatch Blocks with Hooks.....$13.50
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1—50-ton Whitcomb Diesel Elec. Locomotive
1—65-ton G.E. Diesel Elec. Locomotive
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1951

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FS-6493, Engineering News-Record
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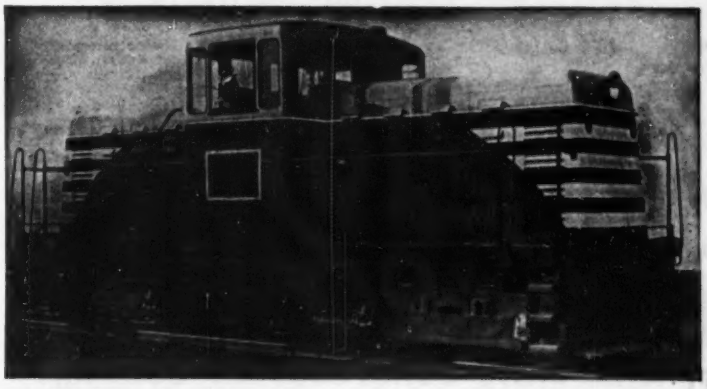

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Special Placing Equipment for Arch and Invert

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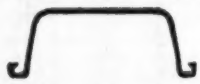

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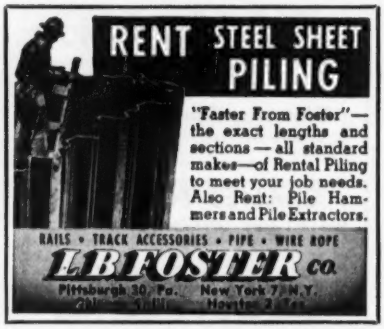
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Glazed coating for concrete blocks

Kem-Krete permits laying up of structural wall with glazed surface—all in one operation

LATER THIS MONTH in Cleveland, representatives of Sherwin-Williams Co. and the Hurst-Rosche Co., Hillsboro, Illinois, will meet with a group of concrete block manufacturers. The purpose of the get-together is to announce and demonstrate Kem-Krete, a process which faces concrete blocks with a permanent glazed coating in a variety of colors. By using the new coated units, bricklayers can lay up a structural masonry bearing wall with a facing like that of glazed terra cotta —all in one operation. Cost, according to the companies, will be 40 per cent below that of ceramic finished-wall materials, and only 40 per cent more than plain, unfinished concrete block.

• **Offshoot of research program**—The entire development stemmed from a secret research project conducted by Sherwin-Williams for the government. Two materials, made up of almost 100 per cent solids, are united at the tip of a spray gun to form the coating. A chemical co-polymerizing action of these two coating materials eliminates the need for high temperature curing.

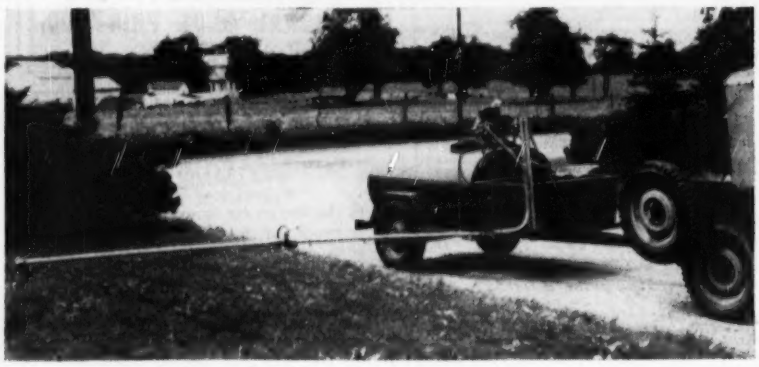
• **Special machine designed**—Hurst-Rosche Co. of Hillsboro, Illinois, received specifications from S-W and designed a special machine called the Krete-Koter, which works in connection with Besser concrete block-making machines. Each day the machine, which is 25 ft long and 10 ft high, can handle 2,000 regular concrete blocks. A conveyor first carries the blocks under a sander for removal of burrs; a vacuum carries off resulting dust.

Next a colorless filler is sprayed on and squeegeed into the surface pores. The final coating is applied under normal spray pressure and the two materials, coming from separate containers and carried through separate tubes to the nozzle, are intermixed and applied immediately. From there, the blocks are conveyed, placed on pallets and stored for 16 hours for curing. Coating is 16 to 17 mils thick, compared with average of 3 mils for outside house paint and 2 mils for most industrial appliances.

• **Pass tough tests**—The new Kem-Krete blocks have been subjected to severe tests for opacity, acid-resistance, imperviousness, fracture resistance, combustion, mildew, etc.; and have passed them all amazingly well, according to the manufacturers. In the freezing-thawing test, for example, blocks were soaked for 18 hours in water; then placed in a refrigeration unit, at minus 20 deg F, for 5½ days. Repetition of the test for 20 cycles, allowing one hour of freezing and one hour of thawing, produced no signs of failure in the Kem-Krete film. In chemical resistance tests, various concentrations of caustic soda, concentrated hydrochloric acid, trisodium phosphate, gasoline, sodium chloride, xylol, and Methyl-Ethyl Ketone were applied and left for 64 hours. In every case there was no effect on the glazed coating, and when textured coatings were thus subjected there was very slight dulling only with the caustic soda concentrations and gasoline.

• **Four machines now running**—Hurst-Rosche established a company called Krete-Koter Service to manufacture and sell the new machines which are price-tagged at $7,000. They will go only to concrete block makers using Besser machines. Companies now using the machines include: Dura-Crete Products Inc., Muncie, Indiana; Peyton Concrete Products Co., Benton, Illinois; Gage Bros. Products Co., Sioux Falls, South Dakota. Coating material costs the block makers $15 per gallon and conventional type mortars can still be used in laying up the blocks. All standard masonry units can be coated, including single-face, double-face, corners, bullnoses and jambs. There are twenty different colors available, both for glazed and textured finish.

The glazed Kem-Krete provides a smooth, waterproof surface, unaffected by washing compounds. It's recommended for corridor walls, portions of walls below dado lines and wherever surfaces will be subject to frequent washing and cleaning. Kem-Krete textured finish retains, to the greatest degree possible, the natural acoustical or sound-deadening characteristics of unfinished concrete where these properties are important, as in auditoriums, meeting halls, etc. SHERWIN-WILLIAMS COMPANY, 101 PROSPECT SW, CLEVELAND, OHIO.



Roadside sprayer kills brush, weeds

It has long been agreed that the only economical method of maintaining clean roadsides is to kill all brush and weeds completely. Spraying is accepted as the best method for doing the job, since it's quicker and more effective than pulling brush or cutting it.

The Gledhill roadside sprayer shown here is a compact unit that comes in two capacities, 135 and 275 gallons. It has a low pressure system that works between 20 and 30 psi. This low pressure prevents fogging and drifting with resultant danger to adjacent crops and gardens. A 50-ft hose is attached to the unit for spraying inaccessible areas.

The 135-gallon model measures 108 in. long by 58 in. wide by 64 in. high. It weighs 680 lb against a weight of 890 lb for the larger, 275-gallon model. This latter measures 144 in. in length and is the same as the 135 in all other dimensions. GLEDHILL ROAD MACHINERY CO., GALION, OHIO.

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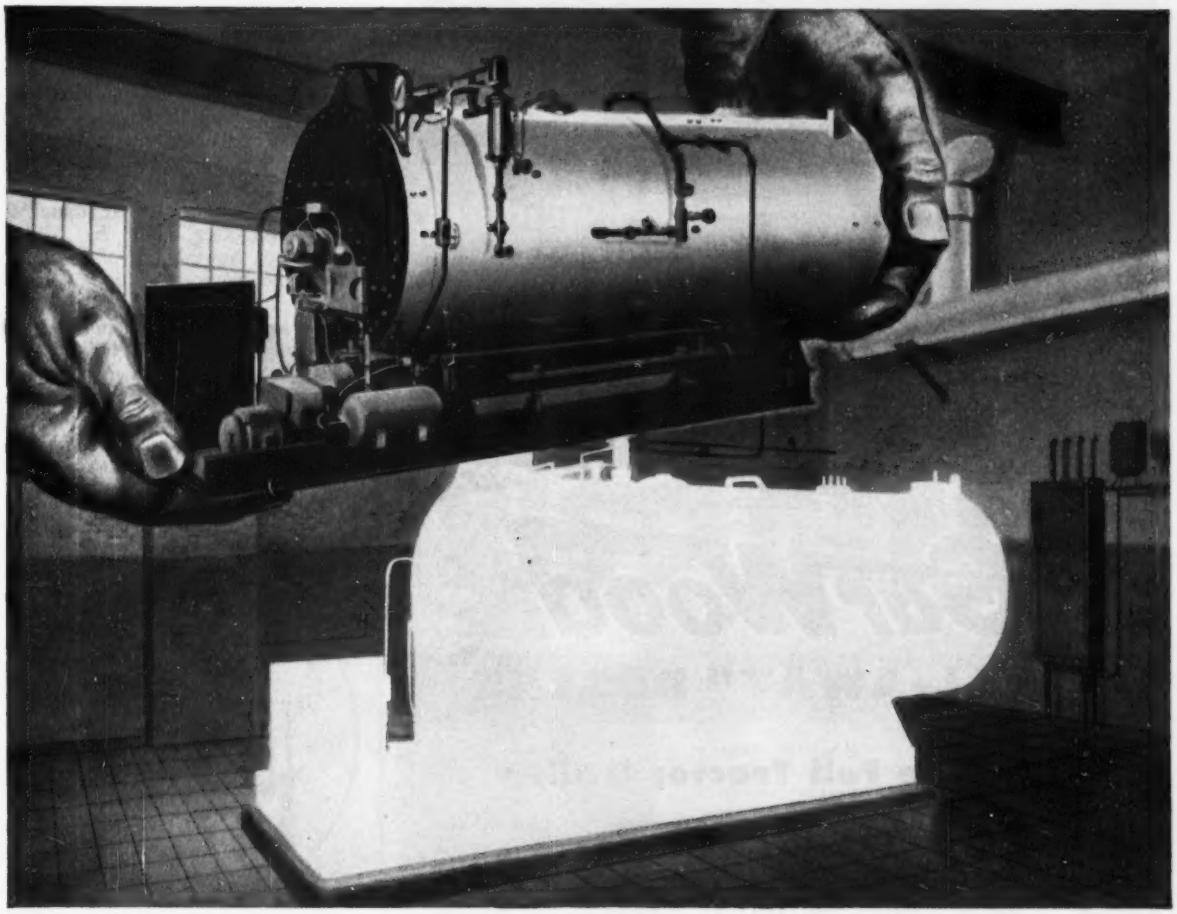

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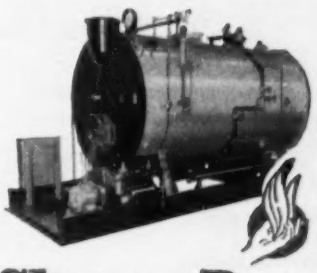

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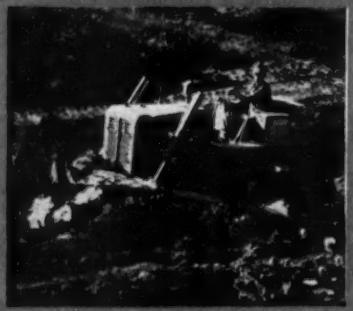

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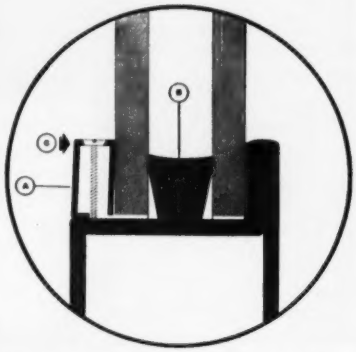
Findlay Division • Executive Offices • Wayne, Michigan

NEW PRODUCTS

Waterproof cover protects exposed air conditioners

Anyone who has a room air conditioner straddling the window sill in his office undoubtedly pays attention only to that portion projecting into the room. The other end, exposed to inclement weather all year 'round, is usually forgotten. Not by Miller-Prager Co., however. It offers an air conditioner cover that fits any make or model.

Said to be waterproof, mildewproof and flameproof, the M-P cover prevents drafts from entering through vents and screens and protects the vital working parts throughout the winter months and precludes damage to them. MILLER-PRAGER CO., BOX 11, RADIO CITY STATION, NEW YORK 19, NEW YORK.



CROSS SECTION of Dualbilt, formerly known as Thermo-Glaze, shows how local glaziers can seal a dehydrated air space between two panes of glass. Tightening of screw (C) exerts bead pressure against glazing tape through movement of rocker type bead (A). Pressure forces both panes against compressible spacer (B) to form hermetic seal. A portable mechanism draws out trapped air, dehydrates it and returns it to sealed air space.

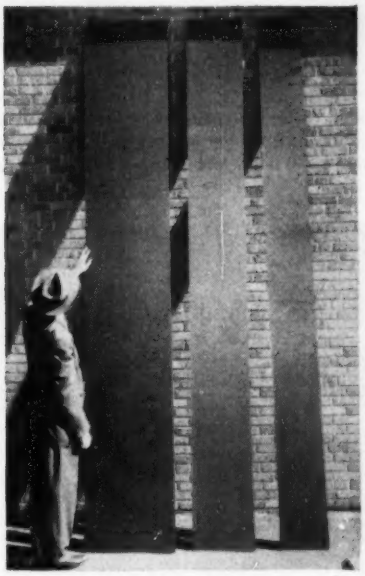
Thermopane or Thermo-Glaze: here's the difference

Thermopane, a product of Libbey-Owens-Ford Glass Co., is an assembly of two sheets of glass with dehydrated air sealed in between them at the factory and the entire assembly then shipped for installation in frames made by other companies.

Thermo-Glaze, a product of Steelbilt, Inc., is a method incorporated into door-wall and window frames by which a local glazier installs two sheets of glass cut to size from his regular stock. He is then able to seal hermetically the sandwiched air space

and fill it with dehydrated air at the time he installs the glass at the job site.

Although both products are intended to perform an insulating function, they are entirely different in nature and should not be confused. At the suggestion of L-O-F, Steelbilt has changed the trade name of its dual glazing system from Thermo-Glaze to Dualbilt to avoid possibility of confusion between the two products. Steelbilt, incidentally, is one of the manufacturers that make frames for Thermopane installations. STEELBILT, INC., 4801 E. WASHINGTON BLVD., LOS ANGELES 22, CALIF. and LIBBEY-OWENS-FORD GLASS CO.



Three widths of Masonite pre-cut for lap siding

Masonite siding in 8-, 10- and 12-ft lengths and in widths of 12, 16 or 24 in. is now being produced for lap siding, especially in the new ranch-type houses. Offered pre-cut and packaged for the first time, the material provides uniformity, smoothness, extra width and durability.

The siding has proved to be resistant to all types of weather, is said to be tougher than oak, and has high impact and abrasion resistance. It is grainless, and therefore won't split, splinter or crack. The Masonite siding comes in two thicknesses, ½ in. and ⅝ in., and can be provided with a newly-designed shadow strip. Like the other Masonite products, (the siding is made of Tempered Presdwood) it has high paintability. MASONITE CORPORATION, 111 W. WASHINGTON ST., CHICAGO 2, ILLINOIS.

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California Contractor cuts curb costs with Pacific Clamps

Hal Bennett, Contractor, Oakland, California, cut construction down time and saved many valuable man-hours by using Pacific all-steel reusable Clamps on a recent integral curb job.

On any job involving curbs, integral curbs, or curbs and gutters, Pacific all-steel Clamps eliminate wood stakes, minimize nailing—gets the job done faster and more economically. One set of clamp handles all jobs. One carpenter and one laborer can keep ahead of concrete crew on average job. Clamps adjust from 4" to 10" curb width; to 36" height; and any batter.

Write for Bulletin C and prices.

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Los Angeles 5 California

CELOTEX CORP'S channel seal roof insulation features a special bevel on the four deck-side edges of each unit. Thus a network of triangular channels is formed between roof deck and insulation when units are applied. These protect against localized pressure build-up, with consequent blistering or separation of felt from insulation. Sizes are 24 and 48 in. square in thicknesses of 1, 1½ and 2 in.—The Celotex Corp. 120 S. La Salle Street, Chicago 3, Illinois.

THE HUBER MAINTAINER now sports a size of dozer which reaches right under guard rails and fencing to scalp berms and shoulders which up to now had to be done by hand. Blade measures 48 x 6 x ½ in. and has a 6-in. clearance Maximum dozer reach is 72 in. and the rig weighs 520 lb.—Huber Manufacturing Co., Marion, Ohio.

Rust inhibitor used with rock salt

Use of rock salt is one of the most effective methods for street and highway engineers to keep snow-covered roads and streets open and safe for travel in winter. One of the bad features of this treatment, however, is the fact that briny slush is highly corrosive to vehicles, steel overpasses, bridges, etc. That drawback and all its attendant complaints have been done away with, according to the manufacturer, by the addition of Banox to the salt. One percent by weight is all that is needed.

Banox is a rust inhibitor. Mixed with salt, it eliminates all objections to the use of salt for keeping streets in driving condition. It is a non-toxic, odorless, polyphosphate compound which the manufacturer claims is harmless to the skin, eyes, clothing, shoes, animals, paint, auto finishes and tires.

A number of public officials prefer Banox in a colored form so the presence of the rust inhibitor in salt brine is readily noticed. Therefore, Banox No. 1 contains a harmless and non-staining coloring agent which causes treated slush to glow with a faint green color. Banox No. 1-P is available as a colorless material. CALGON, INC., P. O. Box 1346, PITTSBURGH 30, PENNSYLVANIA.

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Fuller offers the most complete line of heavy duty transmissions available — more than 100 models—for every heavy duty application using internal combustion engines.

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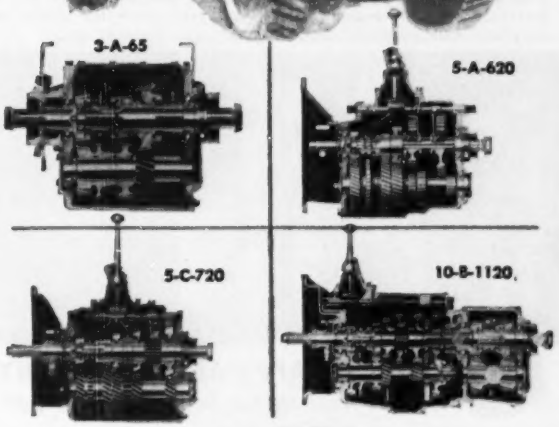

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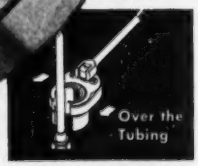
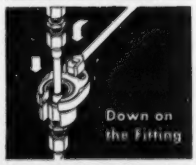
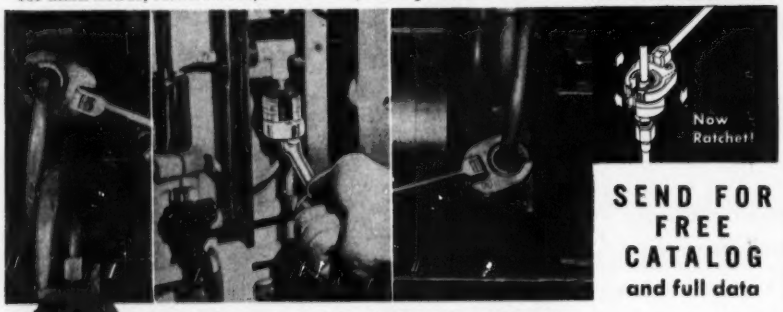
Now available to you, the Socket Type Open End Ratchet Wrenches are sold singly or in sets (consisting of several sockets, a ratchet head, square drive handle and enameled steel box.) 6 sets, 64 sizes of sockets from ¾" to 4". Adaptors also available for allen heads, screwdriver, turnbuckle, and Spanner use.







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PUBLICATIONS

Four-cycle Engines—Nordberg's 9-in. and 13-in. bore Diesel, Duafuel and Spark-fired gas engines are described thoroughly in the company's latest 12-page booklet. Printed in three colors and labeled No. 205, the booklet describes pressure lubrication, high velocity cooling, efficient fuel systems and other design characteristics of the four-cycle engines. These features are aptly shown in a three-color schematic cross section on page 4, which also shows the lubricating oil and cooling water systems.

Engines described are the non-supercharged, supercharged, intercooled-supercharged and SUPAIRTHERMAL. Tables show brake horsepower ratings with weights, standard and optional equipment and outline dimensions. NORDBERG MANUFACTURING CO., MILWAUKEE 1, WISCONSIN.

Tag Lines—Users of traveling or overhead cranes can step up efficiency in all magnet operations in steel plants, foundries, scrap yards and on other industrial jobs, according to this 16-pager on the installation, operation and care of Rud-O-Matic magnet reel and tagline.

In addition to the magnet type, information is included on standard Rud-O-Matic taglines for use with clamshell buckets. Address requests for the booklet to K. V. GRIFFITTS, MCCAFFREY-RUDDOCK TAGLINE CORP., 2131 E. 25TH STREET, LOS ANGELES 11, CALIFORNIA.

Load Binders—A one-sheet release shows a close-up of the E-Z PULL Load binder on which "the cams do the work." Photos show typical clamping and holding applications; one on a truckload of logs, another on a huge steel girder. Weighing 18 lb, the heavy-duty Type 4 is guaranteed to have no slack and is said to be equally efficient on corners as well as on straight pulls. Take-up is 4 in. and each load binder, made of Permasteel castings, is tested thoroughly before shipment. TEXAS FOUNDRIES, LUFKIN, TEXAS.

Adjustomatic Scaffolding—Offers four exclusive features: Instant lock, aluminum couplers, tapered studs and three-point braces. In a highly-illustrated 8-page folder the company describes these four new features and shows how they speed erection time, dismantling time and general handling of scaffolding components. There are no wing nuts, no bolts, no loose parts and no tools required. A complete

line of accessories for any particular job is included as well as a full selection of panel styles for various requirements. Ask for Catalog 952. AUTOMATIC DEVICES INC., 1260 HODIAMONT AVE., ST. LOUIS 12, MO.

Tubular Frame Conveyors—One of the big problems connected with structural framing for conveyor systems is the possibility of water and material build-up. It's less likely to happen with tubular trusses described in this 8-page booklet. Other features for the tubular framing include: rigidity, less chance for misalignment and high strength-to-weight ratio. Cutaway views, line drawings and specifications are all included. E. F. MARSH ENGINEERING CO., ST. LOUIS, MISSOURI.

Basic Units for Crushing Plants—This new 16-p bulletin published by Pioneer Engineering Works, a subsidiary of Poor & Co., explains the purpose, features and specifications of Pioneer crushers, feeders, conveyors, vibrating screens, revolving screens, scrubbers, dehydrators, bins and related units. Entitled "Basic Units", it is of particular interest to quarry, mine and cement plant operators. PIONEER ENGINEERING WORKS, INC., 1515 CENTRAL AVE., MINNEAPOLIS 13, MINN.

Maintenance of Unpaved Roads—This is a pocket-size booklet of 36 pages which tells about the use of calcium chloride in maintenance of unpaved roads. Included are sections on how and where it can be used, maintenance objectives, shaping and crowns, binder soil, etc. Illustrations show roads before and after reshaping, with proper and improper crowns, before and after calcium chloride reshaping. CALCIUM CHLORIDE INSTITUTE, 909 RING BLDG., WASHINGTON 6, D. C.

Wire Rope—Two booklets, packed with information on wire rope are available from A. Leschen & Sons Rope Co. One, a 64-pager, is entitled "Leschen Wire Rope Handbook"; the other, a 72-pager, is entitled "Use and Care of Wire Rope." The first one is designed to help users become expert wire rope buyers. It contains descriptions, diagrams and illustrations of all the many types available from the company, as well as working loads, lubrication, safety factors and specifications. The second is also pocket-size, and describes proper methods of reeving, splicing, cutting, handling, storing. A. LESCHEN & SONS ROPE CO., 5909 KENNERLY AVE., ST. LOUIS 12, MO.

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EDITORIALS

Practical experience for teachers

FROM RUMBLINGS heard already it appears probable that a resolution relating to engineering teachers adopted by the National Council of State Boards of Engineering Examiners at its annual meeting is going to be the subject of heated discussion. It has already been submitted to the boards of the various engineering societies for consideration and action.

The resolution (ENR Dec. 25, 1952, p. 43) states that boards of engineering examiners, when passing on the application of engineering teachers for a license, shall require that at least one year of the qualifying experience shall have been in some area other than teaching or research and shall have been under the direction of a licensed engineer. It then goes on to advise college administrators to require that engineering teachers be licensed engineers or under the direct supervision of licensed engineers, and that when they come to upgrade teachers, engineering experience outside of college halls shall be given equal weight with advanced study.

Defenders of academic freedom are certain to find these requirements objectionable. However, in defense of the committee that drew up the resolution, it should be said that one of its objectives was to help the young engineering teachers who find themselves between college administrators who demand that they study toward advanced degrees, and license boards who insist that they cannot teach properly without some practical engineering experience.

The source of the trouble, of which this resolution is only a symptom, lies deep in current thinking about registration of engineers. It springs from the widely accepted opinion that all engineers should be licensed. Actually, the only engineers who need to be licensed are those whose practice involves danger to life or property. Yet the advocates of licensing have always refused to recognize that limit because they hoped through universal licensing of engineers to provide a bond that would tie all engineers into a single, unified profession.

Possession of a license by an engineering teacher is desirable if he expects to gain practical experience in engineering. But neither the practical experience nor the license is essential to TEACHING the fundamentals of engineering. There were great engineering teachers before there were engineering licenses, and an examination of the record probably will show that some of the greatest engineering teachers never had any practical experience.

Today, in teaching, more and more emphasis is being placed on fundamentals of engineering and less and less on specialization. Under such conditions, the type of practical engineering experience that the young teacher can obtain probably adds little to his fund of the basic information he needs for effective teaching.

If the profession continues to hold to the desirability of having teachers licensed, licensing boards would appear to be contributing most to the improvement of engineering teaching by exempting teachers from any requirement for practical experience outside the field of teaching and by laying special emphasis on the character and scope of the individual's scholastic training and teaching experience.

Opportunity in Alaska

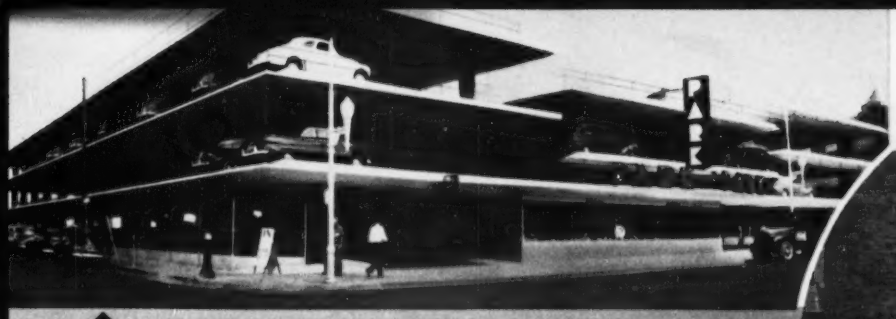
ARCHITECT-ENGINEER FIRMS along the West Coast soon will be finishing plans for a substantial part of the current $240-million construction program for Army and Air Force facilities in Alaska (ENR Dec. 11, 1952, p. 32). Shortly, when the Alaska District, U. S. Corps of Engineers, puts the plans out for bids, contractors all over the nation will have a two-fold opportunity.

First of all, the program gives contractors a chance for new business at a time when defense construction in some areas has passed its peak, and started to decline. Staffs built up for the state-side defense work can be kept busy on work that is similar to what they have been doing. Secondly, the program permits contractors to make a real contribution to the security and economy of the United States, by sharpening their pencils and reducing still further the costs of buying construction in Alaska, which is a vital crossroad of defense against attack from the Orient.

The work has an element of adventure, combined with some drawbacks. Foremost among the drawbacks are a short working season, long supply lines and skilled labor shortages. But during the short season, weather is as good as in the temperate zone of the Unites States. And government officials, together with the many contractors who already have gone to Alaska, have done a fine job of improving the supply and labor picture. As Alaskan construction volume increases, the picture will improve still further.

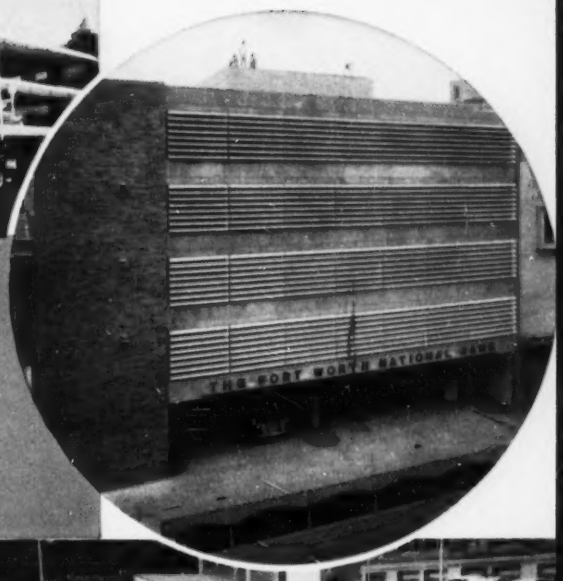
So contractors should be interested in the Alaskan work. In fact they are. Their interest was evidenced last month by heavy attendance at conferences in the largest four West-Coast cities, where the Alaska District Engineer, Col. Louis H. Foote, described the 1953 construction program and told of improved construction conditions in the territory.

With this and other kinds of cooperation from the government engineers, contractors can approach Alaskan work with confidence. And they can do it knowing they are doing their patriotic duty by performing an outstanding service for the national welfare.



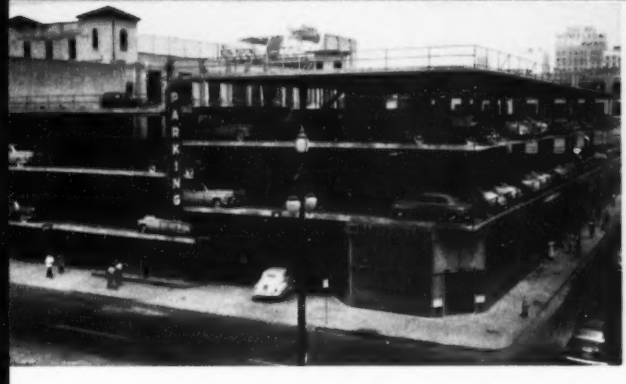
Miami Parking Garage, Miami, Florida. Archt.—Robert Law Weed; Contr.—Gust K. Newberg—both of Miami, Fla. Pozzolith Ready-Mixed Concrete supplied by Maule Industries, Miami Beach, Fla.

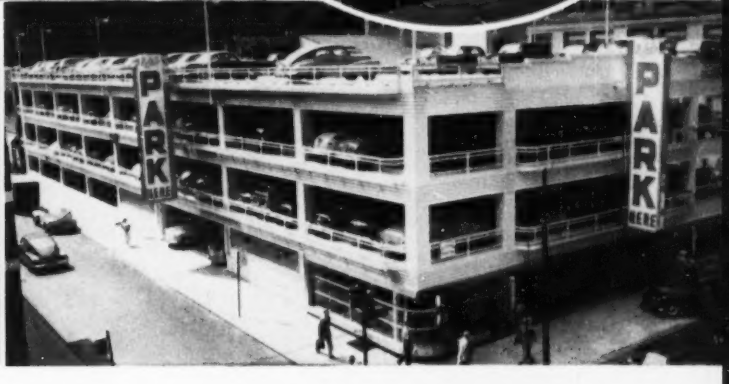
Fort Worth National Bank Garage, Fort Worth, Texas. Archt.—Preston M. Geren; Contr.—Thos. S. Byrne, Inc.; Pozzolith Ready-Mixed Concrete supplied by Fort Worth Sand & Gravel Co.—all of Fort Worth, Tex.



Blaise Parking Garage, New Orleans, La. Archt.—Diboll-Kessels & Assoc.; Contr.—Gervais F. Favrot Co.; Pozzolith Ready-Mixed Concrete supplied by Johncke Service, Inc.—all of New Orleans, La.

Eglin's Garage, Philadelphia, Pa. Archt.—W. F. Silliman; Engr.—J. E. Good; Contr.—John A. Robbins Co., Inc., Pozzolith Ready-Mixed Concrete supplied by Warner Co.—all of Philadelphia, Pa.





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A Virginia highway's answer to modern, heavy traffic —

— top-to-bottom flexibility

Large photo shows the Texaco Sand Asphalt wearing surface being laid on Virginia Route 147 near Richmond. Other photo is a close-up of the Texaco Asphaltic Concrete foundation. The Atlantic Bitulithic Company of Richmond did the work.

Virginia's Route 147 is a primary highway, used by traffic on US-1 and US-60 to by-pass the city of Richmond. A section of this route now under construction is noteworthy because of one feature, in particular. From surface to subgrade, it is 100 percent flexible in character. A 1½ inch Texaco Sand Asphalt wearing surface is being laid on a 5-inch Texaco Asphaltic Concrete foundation, under which there is a 6-inch sub-base of clay-gravel.

Completely flexible construction, such as that employed on this Virginia highway, possesses advantages which pay off in durability and low maintenance cost. A highway of this type absorbs the impact of heaviest traffic, greatly reducing the possibility of damage due to this cause. Because it is flexible for its full depth, the highway structure maintains complete contact with the supporting subgrade. Unevenness in the surface due to settlement of the subgrade can be corrected quickly and at low cost, with a minimum of inconvenience to traffic.

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